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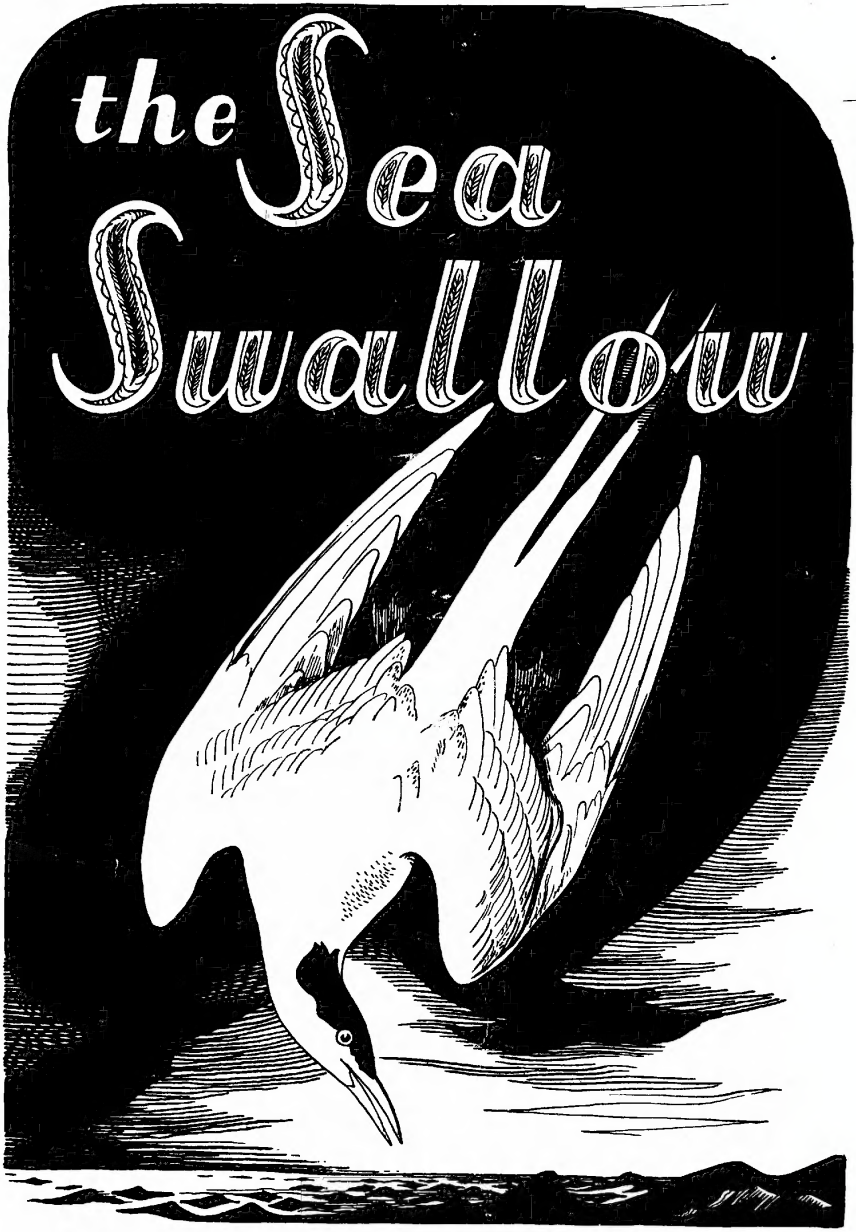
the Sea Swallow



BEING THE ANNUAL REPORT
OF THE ROYAL NAVAL
BIRD WATCHING SOCIETY

Published December, 1959

ROYAL NAVAL BIRD WATCHING SOCIETY

(Affiliated to the British Trust for Ornithology)

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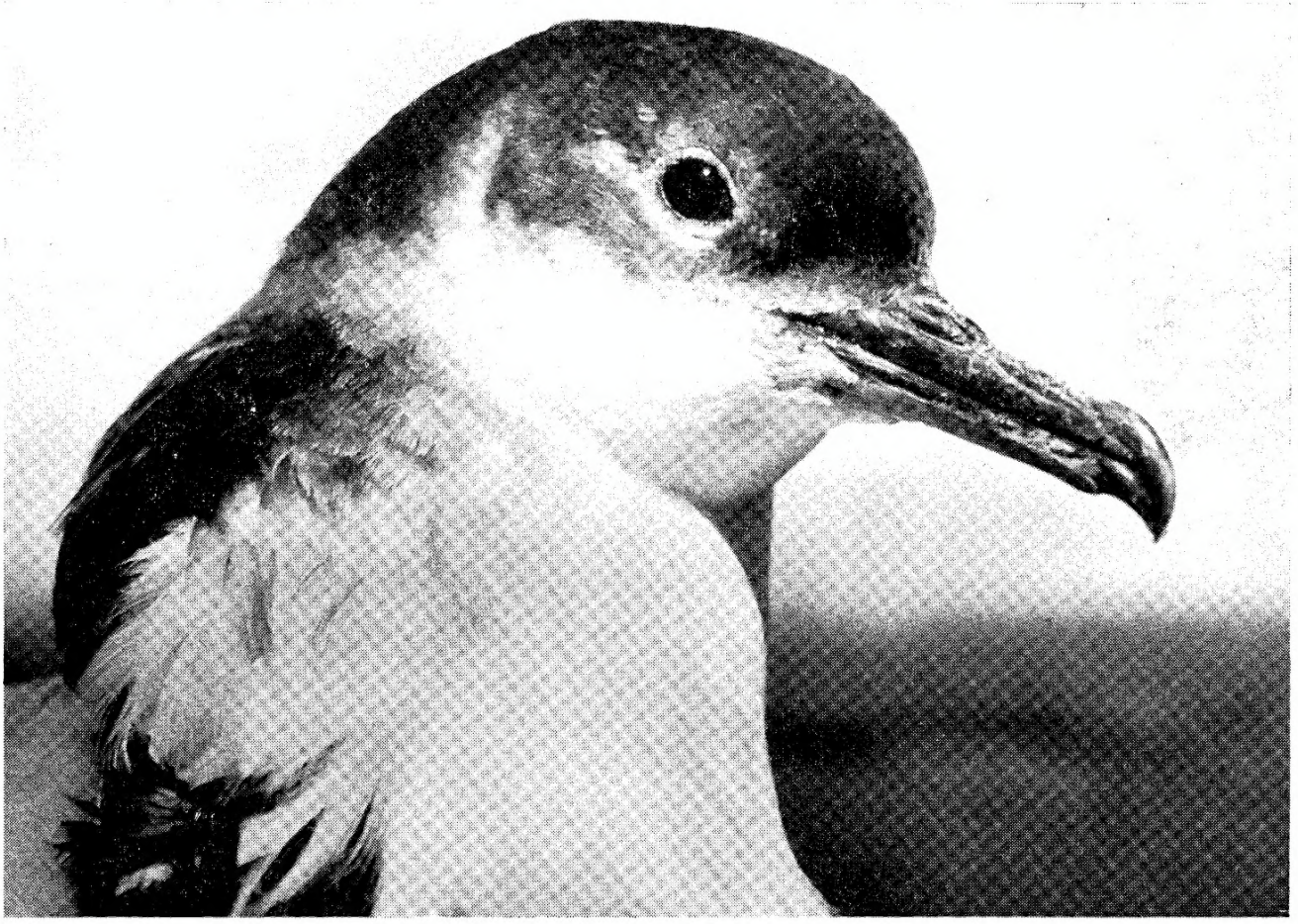


Manx Shearwater
Photo by Lieutenant R. F. Tuck, Royal Marines.

FOREWORD

In introducing our 1959 Annual Report from my new Chair, my first wish is to acknowledge the co-operation our society continues to receive from outside sources.

I shall not engender ill feelings amongst members when I suggest that our interest in watching birds lies more truly in the sheer enjoyment that the sight of birds about us affords than in the higher scientific fields of bird observation. But members will surely agree that we should not stand still, and to be privileged to receive comments and stimulating articles from authoritative sources is a matter of much satisfaction.

With the increasing inflow of carefully prepared sea reports on ocean birds I believe that we can render some service in return. The Society is therefore grateful for the co-operation it has received in bringing to fruition the proposal that the original copies both of former and future sea passage report sheets should be made available for general study. Details of this arrangement appear in this volume, and I would express special thanks to Dr. W. R. P. Bourne, who has undertaken the laborious task of cataloguing the series, and to Mr. James D. Macdonald who has agreed to provide a home for these records in the library of the Bird Room of the British Museum, Natural History.

I would mention, too, the interest being taken by T. and J. Harrison Line through Mr. E. Carter Braine through the purchase of copies of Sea Swallow and Sea Passage Bird Lists for distribution to their Fleet. I hope that we shall soon welcome new members from among their ranks.

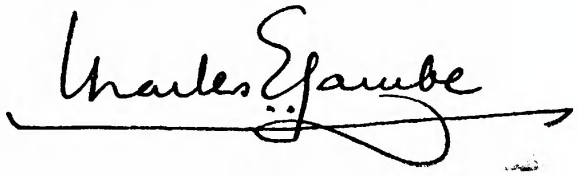
For some time the question of the validity of Members' annual subscriptions being executed under Deed of Covenant has been under consideration by the Board of Inland Revenue. I am glad to say that the Board will now accept subscriptions under covenant.

I wish particularly to commend this system to members ; the scheme affords considerable financial help to our society through the ability to claim repayment of income tax on subscriptions. Members will be able to execute Deeds of Covenant commencing with their 1960 subscriptions.

In the home field while Commander C. E. Hamond will be continuing the initial plotting of incoming sea reports, and the concurrent study of new Sea Passage Bird Lists, the original reports will in future be passed on to Dr. W. R. P. Bourne who has kindly undertaken to prepare future "Notes on Sea Reports" for our Annual Report before lodging these reports in the library.

There is also much of interest from reports from members who are ashore. It is nice to think that even my window at the Admiralty gave a full dress view of the episode of the brood of mallard described in this volume and I shall look forward to a repetition next Spring.

Good wishes to you all for 1960.



OFFICE OF THE FIRST SEA LORD,
ADMIRALTY.

November, 1959.

EDITORIAL

State of the Society

Nineteen-fifty-nine has brought the addition of thirteen new members and one new honorary member making a total membership strength of 226. Of the new members eight are from the Merchant Navy.

It is certain that there are still many potential members who are not aware of the existence of R.N.B.W.S.; we hope that members will not relax their efforts to attract newcomers.

Sea Reports

The increased number and careful preparation of sea report sheets received is most encouraging.

The introduction of the sea report sheet library is something of a challenge for the future, and Dr. W. R. P. Bourne's comments and suggestions will pave the way to further valuable information.

Library of Sea Report Sheets

For some time we have felt that the information from sea report sheets should be made available for more general study.

Dr. W. R. P. Bourne has been cataloguing past reports by "years," and through the good offices of Mr. James D. Macdonald these have now been deposited in the library of the British Museum (Natural History) at South Kensington.

Already the collection includes the original copies of reports from over 200 voyages in all seas of the world covering many thousand observations. The series will be continued year by year and we hope it will provide a valuable background for studies by other ornithologists of the geographical distribution of the ocean birds.

Subscriptions Under Deed of Covenant

The Board of Inland Revenue has now agreed that annual subscriptions executed by R.N.B.W.S. members under Deed of Covenant will be eligible for repayment of income tax to the society. Full details of the scheme have been circulated to members.

The financial advantage to the society if this scheme is supported is well illustrated by the fact that for every eight subscribers at the 10/- annual rate who execute Deeds of Covenant the society can recover in tax relief the equivalent of subscriptions of five new members.

Sea Swallow

We are very anxious to increase the size of the journal and include articles from other experienced ornithologists as well as material from our own members.

We are especially glad to include on this occasion Dr. E. G. Franz Sauer's article on Star Navigation of Nocturnal Migrating Birds. Dr. Sauer will be very pleased to hear direct from any member wishing to write on points which may arise on this topic; his address is:—Institut für Umweltforschung, Universität Hamburg, Hamburg I.

Unfortunately the small circulation of *Sea Swallow* and consequent relatively high cost of publication still restricts the amount of printed matter that can be included. Shipping companies have placed additional orders in the past and we hope that they will continue to do so,

I would like to thank all members and others who have forwarded material or offered help in the publication of the current issue.

G. S. Tuck.

NOTES ON SEA REPORTS RECEIVED 1958 - 1959

By W. R. P. Bourne, M.A., M.B., M.B.O.U.

(Edward Grey Institute, Botanic Garden, Oxford)

For the last few years the task of analysing and commenting on the R.N.B.W.S. sea bird reports has fallen on Commander Hamond. Only those undertaking this sort of work can realise the labour it involves. The growing success of the scheme has made a division of effort necessary, and I have therefore been asked to write notes on the reports for *Sea Swallow* to free Commander Hamond to devote the whole of his attention to their analysis. I should like to start by paying a tribute to Commander Hamond, his wide knowledge of birds, his notable achievement in analysing reports and mapping the results which underlies the production of the R.N.B.W.S. Sea Passage Bird Lists, and the delightful way he has written these notes in the past. I shall try to imitate his methods in the future.

Perhaps I had better begin by setting out the principles which have guided me in writing this year's notes. They are intended firstly to acknowledge the time and trouble members have devoted to the collection of knowledge, secondly to indicate the progress of the scheme, thirdly to report important new information which may come to light in the records (I hope all important records will presently be summarised and reported in a formal scientific manner elsewhere). fourthly to indicate a few opportunities for further investigation, and finally to provide a few critical notes on the information received with the object of clearing up some common errors and improving the general quality of the reports. I realise that the last object could give rise to offence ; the remarks are not intended in a spirit of negative criticism, but are supposed to be helpful, and I hope anyone who may feel they have received rough treatment will not take exception to it.

The reports continue to show a steady improvement in size and quality. We are once more pleased to welcome several newcomers who have supplied some interesting notes, and we hope that they will be able to maintain their interest. The study of seabirds is a difficult subject because little is known about many of them, and there are few other enthusiasts or textbooks to provide assistance. Everyone encounters difficulties and makes mistakes, and beginners should not let themselves get discouraged, because in surmounting them they are likely to be making a real contribution to knowledge. We try to help with these notes and in personal letters, and would always be glad to assist with any problems.

I have recently read through all the past reports while cataloguing them for the library of reports discussed elsewhere, and this seems an appropriate moment to raise several points for consideration in future work :—

Substantiation of Identifications

If the reporter and analyser are to work together for their common benefit it is essential that sufficient detail should be given for all records to indicate their reliability, or where there is an element of doubt the possible alternatives. It is frequently clear that people are

making mistakes in identification because they fail to see things which they ought to see and report things which they ought not to see. If a few details are supplied with these records it is usually clear what has happened, and we can then sort the situation out to everybody's satisfaction, whereas a few obviously incorrect identifications presented without an explanation cast suspicion upon the whole of the rest of an otherwise admirable report. It may be possible to clear up the mistake afterwards, but the addition of a short description would avoid this inconvenience in the first place. Nobody need feel ashamed of occasional mistakes, and we can only help you to correct them if sufficient notes are provided to explain how they happened.

Therefore I should like to suggest that in future all first records in a report, all difficult identifications, and all unusual records should be substantiated by a brief description to confirm their reliability. This does not mean frequent repetitions of long descriptions of familiar birds, but merely a brief note to say how well the bird was seen, its general size, appearance, and behaviour, and especially the way it was distinguished from similar species. This will permit the analyser to assess the reliability of the observation, and incidentally over the course of time demonstrate the characteristic features of the appearance and behaviour of different species. Where, as must often be the case, there is doubt about an identification it is best to report the bird in general terms, such as "a small black and white shearwater" or "a large grey and white gull," with a full description, rather than arbitrarily allocating it to a particular species with inadequate evidence, or simply omitting it entirely. It may always be possible to settle its identity more accurately later, and it might be something unusual. Many such records prove very useful in working out distributions even though the species was never identified precisely at the time, so they should all be reported, if only to discover what they might be.

Form of Sea Reports

The present Sea Report Sheet system of reporting details of every bird seen was designed to make it possible to map the distribution of individual species and ascertain which species normally occur in different parts of the ocean when preparing the Sea Passage Bird Lists. The broad pattern of distribution of the commoner species along the most frequented sea routes has now become apparent, and is already described in several lists. We are now finding that the report sheets from these areas are becoming overloaded with increasing numbers of records of routine observations which add little to our knowledge. It seems time that methods were worked out for restricting the volume of these routine observations, while still collecting useful information on the distribution of the birds. Some of our more experienced observers may have views on this, and we should be interested to hear about them ; meanwhile we suggest the following modifications of the method of recording their observations for consideration :—

1. *Selection of Records.* While we do not wish to impose precise limits on the number of notes received for particular species or sea areas at this stage, it seems time that we asked members to start to try to condense their notes concerning well-known species in familiar waters such as the North Atlantic or the main trade routes

to the east via Suez and Panama, while concentrating on the collection of more detailed notes concerning less familiar species and unknown waters such as the remoter parts of the Pacific and Southern Oceans.

2. *Notes on Distribution.* Once the presence of a bird in a particular sea-area at a particular season has been established, casual records of its occurrence there lose much of their interest. Therefore while we should still like notes of all species seen during a voyage, it would be useful if the more casual notes of common species could be summarised together in one entry for each species at the end of the voyage, reporting the time and place where the first and last birds were seen, their approximate abundance at different periods during the voyage, and the position of any large concentrations, with any interesting details of the bird's appearance and behaviour. Isolated records of scarce species should still be entered individually.

3. *Counts of Birds Seen.* While we no longer need details of casual observations of common species in regions where their presence is well known, it would be useful if people who have the time and inclination could make regular counts of the birds seen, so that the numbers present in different areas can be compared. Such counts should be made systematically in the same way for a constant period at regular intervals, once a day or several times a day, and details of the place, time, weather, water temperature, duration and method of observation and all the birds seen recorded. Where a limited number of counts are made during short passages each could be summarised in one observation on the report forms ; where many accumulate it would probably be better to present them in the form of a table at the end of the report, and we are considering the design of a new type of tabular report sheet for recording this type of observation.

REPORTS

CAPTAIN E. F. AIKMAN. 59/10 : s.s. Beavercove, 59/10a : s.s. Beaverlodge (4 pages).

Occasional notes from North Atlantic crossings, including a number of records of Pomarine Skuas on northwards passage between 47° 50·N. and 41° 17·W. on 23 - 26 April, 1959.

LT. M. BANKART, R.N. 59/12 : Notes made by the Officers of the Watch of H.M.S. Brocklesby between U.K. and Gibraltar in late November, 1958 (2 pages).

Chiefly notable for demonstrating the rapid decline in numbers of birds in these waters after the peak on autumn passage in September and October. A useful first effort.

R. E. BERRY. 59/17 : M.V. Iron Age. U.K. to Brazil and return, February —March, 1959 (2 pages).

A limited but useful series of observations by a new contributor. Madeiran Storm-petrels were identified both ways in the tropical Atlantic but no description is given ; it should be emphasised that the common storm-petrel here is Wilson's in the northern summer, Leach's in the northern winter ; Wilson's patters over the water and follows ships, and is the only dark, white-rumped storm-petrel normally showing

the feet beyond the tail (the yellow webs are hard to see), while Leach's Petrel does not often follow ships, flies like a tern and does not patter, and its feet do not project beyond the tail. The Madeiran Petrel is very elusive and seldom follows ships; it flies a bit like Leach's, but more steadily low over the water. A petrel with a blackish-brown head, white collar, mottled brown back, and mottled brown but largely white belly at 8°N. 28°W. on 7 March is hard to place, but seems more likely to have been the Trinidade Petrel *Pterodroma arminjoniana* than Schlegels Petrel *P. incerta*, which likes colder surface waters.

W. BRACKENRIDGE, 59/8: T.S.S. Captain Cook. Balboa - Wellington, July, 1958 (9 pages).

Detailed notes for an interesting passage, giving valuable details of sea and air temperature but unfortunately none to establish identifications. Tahiti Petrels *Pterodroma rostrata* are unlikely as far south as 26 - 30°S. 136 - 140°W. on 15 - 16 July, since they prefer the central tropics; they would be more likely to be *Pterodroma neglecta* (or *phillipi*) here.

S/LT. J. BRANEGAN, R.N., 59/11: H.M.S. Gambia (18 pages).

Valuable notes from a long cruise in the Indian Ocean between July—September, 1958. The large dark shearwaters were correctly distinguished, though the new species from the Arabian Sea, Jouanin's Petrel *Bulweria fallax* (in appearance a large Bulwer's Petrel) is as usual identified as the Mascerene or Reunion Petrel *Pterodroma aterrima*, which if it still exists (it is only known from four specimens taken on Reunion in the last century) is larger with a squarer tail. Thirty large petrels which were brown above and white below with dark underwings and bills seen at 10°S. 69°E. on 11 July were tentatively but probably correctly identified as the Trinidade Petrel *Pterodroma arminjoniana* which is now known to breed to the south at Mauritius and probably also Reunion. Over 1,000 Common Noddies and over 500 White Terns were breeding on Sand Island off Rodriguez with young of all sizes on 13 - 14 July, confirming the only previous information concerning the breeding season here, found in an unpublished French manuscript dating back to the end of the 18th century; on Mauritius the birds breed at the other end of the year, in the summer. Over 5,000 each Brown-winged Terns and Lesser Crested Terns were finishing breeding on Halul Island at 25° 30·N. 52° 25·E. in the Persian Gulf on 6 August, while 50 Socotra Cormorants and 5 Aden Gulls were present but not breeding, though some cormorants were immature. It should be emphasised that information is still urgently required concerning sea-birds breeding seasons in many parts of the tropics; notes should be made of the number of eggs laid (with counts of numbers of clutches of each size) and the precise size of the young when visiting colonies, to discover local variations and precise laying-dates.

5/E. J. O. BRINKLEY, 59/21: M.S. Batissa. Notes from a series of voyages around the Mediterranean (10 pages).

Mr. Brinkley comments that he thinks the sea-birds of the Mediterranean are nothing startling, but in point of fact while all of them have been recorded many times by people passing through on the

regular routes before, few people have been elsewhere, and the precise distribution of sea birds in the area is little known ; many of them seem to move N.E. in summer, often entering the Black Sea to breed, and then shifting S.W. to the waters off N. Africa in winter. Among interesting notes in the present report is a possible Pomarine Skua seen at 36¾°N. 20°E. on 14 May (these birds must sometimes enter the Med. when migrating north from the Indian Ocean, but there are rather few records), and the enormous concentration of Manx Shearwaters (*P. p. yelkouan*) in the Bosphorus in summer ; nobody seems to have discovered where or when these birds breed, if anyone should have time off in that region.

H.M.Y. BRITTANIA, 59/23. Notes made by the Officers of the Watch during a voyage across the Indian Ocean, Central Pacific and North Atlantic (11 pages).

The observations show evidence of care and reliability and those from the unknown region in the central Pacific are particularly useful. We should like once more to emphasise our appreciation of the ready co-operation of the crew of the Royal Yacht in our work, and hope that they enjoyed spotting the birds as much as we do studying the reports sent in.

CAPTAIN A. J. F. COLQUHOUN, 59/14 : M.V. Elysia, U.K. - Suez - Karachi and return, November, 1958—January, 1959 ; 59/14a, S.S. Eucadia, U.K. - Suez - Bombay and return, May—July, 1959 (32 pages).

Detailed notes for two voyages to the India Ocean. A Cory's (or Mediterranean) Shearwater at 35°N. 18°E. on 18 January is rather a late date, as it seems increasingly likely this species migrates into South Atlantic in winter ; more evidence for its status in the north at this time would be welcome. This bird is described as " a dark brown bird, white belly and underside of the wings, yellow bill " which is adequate, but no descriptions are given for Cory's and Sooty Shearwaters in the Red and Arabian Seas which would otherwise be the first records for these waters ; old reports of these birds (or the British or Leach's Storm-petrels) there seem to be mistaken. Numbers of Mediterranean Gulls were seen at sea in the Mediterranean the wing is described as " very similar to a Black-headed, but only pale grey and white " ; the important character is the white bar along the leading edge of the wing of a Black-head, its absence in a Mediterranean Gull ; in general, Black-heads seem to stick to the shore and Mediterranean Gulls replace them at sea in this area in winter.

2/O. W. P. CRONE, 59/1 S.S. Malayan Prince, Cochin - Suez - Halifax - New York - U.K. - Panama - New Zealand - Panama, July 1958—January, 1959 ; Liverpool - Newfoundland, May, 1959 (12 pages).

A useful, carefully documented series of notes from a wide area, showing a high standard of reliability. Like everyone else, Mr. Crone had trouble among the petrels and shearwaters of the central South Pacific ; this is one of the few parts of the world where the breeding colonies have still to be explored, and it is still highly doubtful quite how many species breed there, though it is clearly a lot. Birds identified *Puffinus creatopus* at 34 - 36°S. and 129 - 136°W. on 16 - 17 November

might have been this species, though it would be an extension of its known range, or possibly *Adamastor cinereus* or one of the large *Pterodromas*. A mention of the bill colour would settle the matter. Others with white marks on the wing identified as *Pterodroma solandri* at 38°S. are more likely to be *Pterodroma neglecta*, which varies greatly in appearance but has a characteristic white mark on the wing; *Pterodroma solandri* seems to be confined to the vicinity of Norfolk and Lord Howe Islands in the south, and its reported presence in the central South Pacific remains unconfirmed, though it has recently been collected wintering in the western North Pacific.

T. G. DIXON, 59/22: Australia - New Zealand - Suva (Fiji) - Honolulu - British Columbia, then Montreal - U.K. February - April, 1959. A detailed and very valuable series of notes from a voyage half way round the world (14 pages).

It is difficult to find many points for comment, though in general Mr. Dixon must be congratulated on the very wide variety of birds seen. The most interesting stretch of the journey lay between Fiji and Hawaii. On the first day (24 March) Wedge-tailed and Christmas Shearwaters were seen, on the second day Sooty or Brown-winged Terns (probably the first, but it is nice to meet someone who is cautious), a Dusky Shearwater and unidentified petrels 16 - 18 ins. long, dark above and white below (Phoenix Petrels?). On the third day there were six Bulwers Petrels and nine birds reported without details as Solander's Petrel. Solander's Petrel might occur wintering in this region, since although it has usually been recorded in the southern hemisphere in the past, it has recently been collected in the NW Pacific as well; but more details are required to establish this rather difficult identification. Black-footed Albatrosses among other species were seen regularly after Hawaii.

L/S B. A. (O) ELLIS AND A. B. KNELL, 59/25: H.M.S. Owen. Various notes from the North Atlantic and Indian Ocean (6 pages). Grey Phalaropes were reported at 15° 48'N. 53° 35' E. on 25 November, though no description is given. It is perhaps worth commenting that the distribution of the Phalaropes in winter still requires much study. They seem to occur offshore in areas where there is a local high plankton concentration, notably off Peru, west and probably south-west Africa, southern Arabia, and the northern coasts of the East Indies. It is not clear whether the different species winter together or separately; there are many records of Grey Phalaropes from West Africa, and only odd dubious sight-records of Red-necked here, but on the other hand many records of Red-necked from the Arabian Sea and Gulfs of Aden and Oman, but no certain records of Greys. Red-necked seem to predominate in the area north of New Guinea, with a sight record off Rangoon, while both species may occur off Peru. The whole subject requires further investigation, especially since it is exceedingly difficult to tell the species apart in winter plumage.

W. L. N. FISKEN, 59/18: M.V. British Hero. Persian Gulf - S. Africa, February - March, 1959 (4 pages).

A useful series of notes for a voyage at right angles to the usual route across the Indian Ocean. "Reunion Petrels" were reported off

Ras al Hadd on 28 February and nine times between 18°N. 58°E. on 1 March, and 8°N. 58°E. on 3 March. These were probably really the new species Jouanin's Petrel (*Bulweria fallax*), as already explained ; it seems to be rather a common bird in this region, which has been confused with the Wedge-tailed Shearwater in the past. As usual, the central Indian Ocean was almost devoid of birds ; the main concentrations seem to occur along the northern coasts, around the archipelagoes, and in the vicinity of the sub-tropical convergence around 30°S. here. Two possible Kerguelen Petrels were reported coasting between Durban and East London ; they were said to be more brown than slaty-grey, and Great-winged Petrels seem more likely ; the Kerguelen Petrel keeps further south, and among other features is said to have a very rapid, swooping flight, like an enormous swift.

F. W. GREAVES, 59/15 : M.V. Derbyshire, U.K. - Suez - Colombo - Rangoon and return, September - December, 1958 (20 pages).

Detailed notes from a well-known route. The dark shearwaters were all distinguished, but Jouanin's Petrel reported as the Mascarene Petrel as usual. Great Skuas were seen around 8°N. 72°E. on 28 November ; no description is given, but it seems a likely record ; there are now an increasing number of possible records of southern Great Skuas north of the equator in the Indian Ocean, and it seems likely that they occur here regularly in the southern winter, though they are likely to be confused with young Pomarines ; more information is required about them.

LT. W. L. R. E. GILCHRIST, 59/19 (2 pages).

Notes from Cyprus waters, including an Audouins Gull and Mediterranean Gulls from Famagusta harbour. Details of the latter would have been acceptable, since I found that the common small gull there was the Black-headed, with a minority of Slender billed and odd Audouins, but never saw a Mediterranean during two winters ; the latter, with Little Gulls, seem to prefer to stay out at sea. In a letter Lt. Gilchrist describes Black Terns seen off Alboran and near Palma and Common Terns in Tangier harbour in April and May, commenting that they do not appear in the sea passage list ; there is a perfectly enormous passage of these birds up the African and Portuguese coasts and through the western Mediterranean at this time, and it is surprising we do not receive more reports about them.

CAPTAIN P. P. O. HARRISON, assisted by R. JONES, R. N. JORDAN, L. HEWELL and M. MICHAEL, M.V. Cambridge, 58/2a, U.K.-Panama-New Zealand returning via Suez, February - August, 1958 (72 pages) ; 59/16, U.K. - New Zealand - Peru and return via Panama, November, 1958—March, 1959 (74 pages).

Captain Harrison and his officers have provided the best reports received for a number of years now, supplying a continuous list of birds seen between Britain and New Zealand with full details of the date and place of all observations, air and water temperatures and notes on the behaviour of birds and other animals. Their reports are illustrated with sketch-maps of their route and drawings of the birds, and it is difficult to do them adequate justice in a short space ; it

would require a minor treatise on marine ornithology. The extent of their diligence and enthusiasm can only be indicated by saying that they see twice as many birds as anyone else and make twice as many notes about them, yet their notes remain clear, interesting, and a pleasure to read to the end.

Among many points of interest, they saw a species of Curlew at 2° 04'S. 90° 14'W. on 8 March, 1958, had a White-faced Storm-petrel (excellently described) come aboard at 12½°S. 74½°E. on 17 July, 1958, saw birds described as "Reunion Petrels *Pterodroma aterrima*" (possibly really this species, or alternatively as usual Jouanin's Petrel *Bulweria fallax*) as 8½°S. 68°E. on 18 July, 1958, and saw six storks and at least 150 hawks crossing the Straits of Gibraltar on 8 August, 1958, reporting hundreds of Dusky Shearwaters at the same time, though one would like to know how they distinguished the latter from the Manx Shearwaters to be expected there. On the second voyage they reported Madeiran Storm-petrels aboard at 37½°N 25½°W. and 35°N. 32°W. on 11 - 12 November, 1958, and saw a White-faced Storm-petrel at 17°N. 65°W. on 18 November, 1958. This is a great extension of the recorded range of the last species, and it is a pity they give no details.

Indeed, if it is possible to criticise the work of this paragon among recording teams, the aspect of their work which still requires attention is as with other observers the adequate documentation of their more unusual records. Thus they report Great Shearwaters in the central North Atlantic in late February, but give no details to confirm that they definitely saw this species and not Cory's (or the "Mediterranean") Shearwater, which is possibly slightly more likely in the north at this time. In the South Pacific, around New Zealand and in the Tasman Sea they report a series of small grey and white gad-fly petrels under the names *Pterodroma longirostris, P. Cookii, P. hypoleuca* and *P. leucoptera* in that order, without saying how they told them apart. It is not clear if these birds can be distinguished in the field, and if the identifications are based on general assumptions it might have been better to lump them all together, saying in passing how the whole group was distinguished from other similar species with which they might be confused, such as the Prions and Blue Petrel. Again, they report Wedge-tailed Shearwaters in several surprising places, west of Panama, south of Australia, and in the North Atlantic, these might have been any of a number of dark shearwaters, most probably Sooty Shearwaters, but it seems unlikely they were Wedge-tailed, and it would have been safer to call them "dark shearwaters" and leave it at that. On other occasions where Captain Harrison has given descriptions or especially drawings of doubtful birds it is possible to suggest corrections for his identifications ; thus a bird with a white wing-patch identified as Solander's Petrel at 10½°S. 102°W. on 27 November, 1958, looks suspiciously like a dark Kermadek Petrel, and another identified as *Thalassoica antarctica* at 27°S. 83°W. on 12 March, 1959, might well have been the same, since it is rather far north for that species. Birds identified as Silver-Grey Petrels around 40°S. and 110°W. in early March look a bit like the White-necked Petrel *Pterodroma externa*, and it is surprising this bird was missed in this region, as it is surprising that they saw so many White-bellied Storm-petrels but no Hornby's Petrels off Peru. Possibly these doubts are quite unjustified, but they would never arise if people

would always provide descriptions to confirm the identification of all species reported for the first time. Otherwise I applaud these reports unreservedly.

CAPTAIN J. S. LANDERS, 59/5: M.V. El Nasser. Notes from the Indian Ocean (1 page).

LT. C. MAITLAND DOUGALL, R.N., 59/24: H.M.S. Protector (4 pages).

Notes written up by the Officer of the Watch during a season in the Antarctic. Protector has produced large series of notes in the past, but the crew have gradually been overcome by the labour of recording in detail the distribution of the commonest sea-birds in the world. Lt. Maitland Dougall writes: "I fear the enthusiasm for making reports rather tailed away, and indeed having once established the identity of a bird it becomes somewhat tedious recording a bird every day as down in those parts the bird life is very prolific. By the end of the season I could identify every Antarctic bird and in their own domains they all occur very frequently." I think these remarks are quite justified, and they raise in an acute form the problem of the best means of recording the distribution of common sea birds which are observed repeatedly in large numbers over a long period. It is unreasonable to expect people to make out full reports of all the birds seen, yet it would be very valuable if we could obtain more precise information concerning the precise limits of each bird's "domain." I have already suggested in the introduction that members seeing large numbers of common species should concentrate on plotting the limits of their ranges and the areas where they are particularly abundant, though if they should have time it would be useful if they could compile regular tables of the number of each species seen on different days. Meanwhile we are greatly indebted to the crew of "Protector" for their continued assistance.

A/B G. C. B. MELVIN, 59/4: H.M.S. Tyne. A list of the birds seen during a return journey through the North Sea to the Arctic Ocean in September (3 pages).

Few birds were seen in the southern North Sea except Guillemots, more further north; Sooty Shearwaters were seen in the Firth of Forth and off the Farnes on 13 September, and many little Auks on one occasion off the Lofotens. A useful report; while the North Atlantic shipping lanes are now well known, there is still little precise information on distribution for regions further north.

CAPTAIN J. B. MITCHELL, 59/13a: S.S. Eastbank. Bahia Blanca - U.K., January, 1959 (3 pages).

Useful notes for a passage across the width of the Atlantic. Large flocks of black and white shearwaters seen around 35°S. 52°W. were probably our own British Manx Shearwaters in their winter quarters; over a dozen ringed birds have now been recovered in winter off Brazil and the Argentine. A variety of small petrels were seen in the region of the equator; these were probably Bulwer's and Leach's petrels, which winter in numbers here, being replaced during the southern winter by Wilson's and the Black-bellied Storm-petrels. It

would have been interesting to have confirmatory details of a possible Black-bellied Storm-petrel seen on this voyage ; it might be a first year bird spending its first summer in its winter quarters. A large white-bellied Shearwater seen off the Cape Verde Islands presumably belonged to the local sub-species of Cory's (or the " Mediterranean ") Shearwater, which usually does not arrive there so early in the year ; wintering Kittiwakes were seen regularly after 25°N. ; they seem to follow the cool Canary current far down the west African coast towards Dakar in winter.

59/13b : s.s. Yewbank. Vancouver - Fiji - Balboa, May—July, 1959 (4 pages).

A valuable series of notes from a little-known area. Captain Mitchell encountered some very awkward problems of identification, and put up a very good performance. Going south in May he saw small dark storm-petrels identified as the Least Petrel and some shearwaters which were dark above and light below among the Hawaiian Islands. The only Storm-petrel known to occur here is the Madeiran, which has a white rump, but the Least might occur. Two black and white shearwaters occur, the pale phase of the Wedge-tailed, which has a swooping, gliding, flapping flight and prefers warmer waters, and a local sub-species of the Manx, " Newells Shearwater," *Puffinus puffinus newelli*, long supposed extinct but recently rediscovered, which has a gliding, fluttering flight and prefers cooler waters. He ran into more Shearwaters, Petrels and Storm-petrels at about 4°S. 167°W. on 1 June, and saw hundreds of sooty terns next day. Then returning to Balboa in July he regularly saw a variety of birds in roughly the same area between 9°S. 166°W. on 2 July and 7°N. 106°W. on 15 July, identifying Blue-faced Boobies, White-tailed Tropic-birds, Christmas Shearwaters, and Phoenix, Herald, Hawaiian and Stejnegers Petrels. I am afraid one would like to see more details of these identifications ; both the Wedge-tailed and Christmas Shearwaters might occur, the first with a long wedge tail and swooping, flapping flight, the second with a short round tail and fluttering, gliding flight, and also a variety of different Pterodroma petrels.

He comments that this is the region of the equatorial counter-current and abounds in fish and bird life ; actually the richest fauna is found along the convergence between the Equatorial currents and counter-currents where upwelling leads to a growth of plankton near the equator, and not only sea-birds but also other animals such as whales congregate here in very large numbers, the whales and storm-petrels in particular wintering here. In the notes from his first voyage Captain Mitchell comments on the occurrence of a number of storm-petrels in the analagous area of the North Atlantic ; even larger numbers of sea birds appear to congregate along the tropical convergence in the Pacific, and since virtually nothing is known about this area it would be very useful if anyone crossing it could pay attention to the birds seen.

A/B D. M. NEALE, 59/7 : H.M.S. Gambia. Detailed notes from a prolonged cruise in the Indian Ocean, March—December, 1958, including a large series of carefully documented routine observations and much new material (44 pages).

He saw Aden Gulls, many Slender-billed Gulls and Persian Shearwaters (actually now usually regarded as a sub-species of Audubon's Shearwater) off Karachi on 2 - 9 May, three White-faced Storm-petrels, Audubon's and Wedge-tailed Shearwaters, White Terns, Common Noddies and Crested Terns off Diego Garcia in the Chagos group on 9 July. S/Lt. Branegan also saw Great Frigate-birds, Black-naped Terns, Bridled Terns and White-tailed Tropic-birds in this region, which is almost unknown), birds identified as the pale phase of the Wedge-tailed Shearwater on the equator at 78°E. on 7 July (presumably migrants from the colony in West Australia?), Pomarine Skuas between 15° and 21°N. and 53° and 59°E. on 26 - 28 July (one might expect Southern Skuas here at this time, but he saw the twisted tail) and white-bellied storm-petrels of the genus *Fregetta* at 4° 12'N. 80° 36'E. on 6 July and 11° 07'S. 49° 50'E. on 17 July. There have been a number of reports of species of this group wintering in the monsoon area of the Arabian Sea now, but the exact species has remained uncertain ; the first one seen here had black markings on the belly and may have been the dark-bellied form *Fregetta tropica*, but the others had white bellies and may have been *Fregetta grallaria* ; caution must always be exercised in identifying these birds because the belly marking vary in both species.

CAPTAIN R. P. DE R. OPENSHAW, 59/9 : S.S. Beachwood. Notes from a voyage across the Indian Ocean (2 pages).

CCH./OFF. T. B. SCOTT, 59/20 : S.S. Captain Cook. U.K. - Panama - New Zealand and return, February—April, 1959 (10 pages).

Detailed notes from an increasingly well-known route. Mr. Scott comments that he was disappointed in the number of birds seen ; it should be pointed out that while much of this route crosses virtually birdless regions in the centre of the oceans, two areas in particular support very rich and little known sea-bird communities, the vicinity of the Tropical Convergence west of the Galapagos, and of the Sub-tropical convergence at about 30°S. in the central south Pacific, while the offshore waters around western Europe, the West Indies and New Zealand also hold a good many sea birds, so that there should be plenty of entertainment available on this route, which has by no means been fully investigated yet.

SECOND OFFICER G. W. SHEWELL, 59/2 : S.S. Mactra and Straat Mozambique. Notes from the Indian Ocean, July, 1958 (2 pages) ; 59/2a, S.S. Necocardia, Singapore - Phillipines - N.W. New Guinea, July, 1959 (2 pages).

A short but valuable and very carefully documented series of notes by a new observer. The information from the little-known waters north of the East Indies which clearly support a rich sea-bird community is very welcome. Red-footed, Blue-faced and Brown Boobies are reported from the South China Sea, and " Sooty Storm-petrels " from the area N.E. of the Celebes. This is apparently an important wintering area for a number of northern sea birds, including Red-necked Phalaropes, the dark-rumped form of Leach's Petrel usually known as Swinhoe's Storm-petrel, Bulwers petrel, the Hawaiian Petrel, and the White-faced Shearwater. It is not quite clear which dark storm-petrel would

occur here in summer ; it might be immature Swinhoe's Storm-petrels, or one of two very closely related large dark storm-petrels breeding to the north which are not described in Alexander, Tristram's Storm-petrel *Oceanodroma tristrami*, a west Pacific representative of the Guadeloupe Storm-petrel, all dark with a pale bar across the upper wing and rump ; or Matsudeira's Storm-petrel, *Oceanodroma matsudeirae*, a west Pacific representative of the Black Petrel, which is uniform dark brown with paler wing-coverts and shafts to the primaries which cannot be seen in the field. It is probably almost impossible to tell these birds apart in the field except by their manner of flight, which may vary but has yet to be described. A White-bellied Storm-Petrel *Fregetta grallaria* was seen well at 8½°N. 128°E. on 12 July ; the abdomen is described as white, but possibly streaked. This appears to be the first record of the species for the west Pacific, and the first indication of the winter-quarters of the sub-species breeding on Lord Howe Island, which sometimes has a streaked breast, a most important observation deserving full congratulations.

ACTING SUB-LT. J. M. TOPP, R.N., 59/3 : H.M.S. Scarborough, Malta - Bermuda - Panama - Christmas Island, June—July, 1958 (15 pages).

Notes kept by the Officer of the Watch on the bridge during an unusual passage. The observers were inexperienced so that some of the identifications are somewhat uncertain, but they are reported with reasonable care and caution, and provide a particularly valuable indication of the bird-life occurring in the unworked region in the tropical Pacific. A very creditable effort, though in these circumstances descriptions of the birds seen are always useful.

CHIEF ENGINEER R. L. TUCKER, 59/6 : M.V. Foylebank. Intermittent notes from a voyage round the world, including a long period cruising in the central Pacific, July—October, 1958 (6 pages).

Several hundred shearwaters seen in the distance at 5° 25′N. 177° 03′W. on 22 September were tentatively identified as Short-Tailed Shearwaters on the return migration from the Behring Straits to Tasmania, which seems quite likely ; it is one of the first indications of the route they follow across the equator. Petrels seen between 5°44′N. 145°30′W. on 28 September and 7° 10′N. 108°30′W. on 5 October were positively identified as Hawaiian Petrels, but no description is given. This seems a possible record, but similar species such as the Phoenix Petrel might occur there, and confirmatory details should really be given for this sort of observation, which greatly extends the known range of a species.

CDR. G. S. WILLIS, M.V. British Patrol, 58/22, La Plata - West Indies - U.K., June—August, 1958 (9 pages).

A very full and detailed report left over from last year. Sub-antarctic species remained common north to 30°S. off eastern South America, followed by a gap. There were then important records of 48 Audubon's Shearwaters, a Southern Great Skua and several hundred Sooty Terns at 7°47′N. 54°12′W. on 17 July in the region of the tropical convergence. The detailed supplementary notes are particularly welcome.

NOTES ON LAND BIRDS AT SEA

Summarised by COMMANDER C. E. HAMOND, D.S.O., D.S.C.,* R.N.

Land bird reports have come from many sources. Space does not permit listing all individual reports, and a selection of some of the more comprehensive reports follows:—

CAPTAIN E. F. AIKMAN, S.S. "Beaverlodge"

October, 1958. A Myrtle Warbler (Dendroica coronata) crossed the Atlantic on board. 4th, 5th May, 1959, in position 50°N., 8°W. (U.K. to Montreal), Swallows, House and Sand Martins coming on board. At one time 5 Swallows and 1 Sand Martin were in the Captain's room. Later on 5th May, 2 Whimbrels identified, and on 9th May, a Purple Martin (Progne subis) came aboard 60 miles S.E. by E. from Cape Race.

24th May, 1959, in 47°N. 52°W. a kestrel.

LIEUTENANT W. G. GILCHRIST, R.N., H.M.S. "Crofton"

Sends a good list from Cyprus observed in 1958. He specifies the Cyprus race or sub-species in a number of cases, including Hooded Crow, Pied Chat, Chukor, Cyprus Warbler, Great Tit, and Crested Lark.

To spot these small sub-specific differences in the field requires extremely close and accurate identification.

A/E. J. O. BRINKLEY

A very nice migration report from the Mediterranean in March, April and May, 1959.

25th March in 34°N., 30°E. Black-headed Yellow Wagtail (Motacilla flava feldegg), and another on 1st April in 37°N., 20°E. These are the first of this species reported on by members.

21st April in 39°N., 11°E. Ashy-headed Wagtail (Motacilla flava cinereocapilla) on board—"Patch under eye darker than crown, but throat white." On same date, Tree Pipit ringed (N.I.O. 2901).

May, 1959—about 50 observations—Nothing outstanding, except a Collared Flycatcher (Musicapa albicollis). A Quail picked up dead and another flushed on 14th May.

CAPTAIN G. E. HODGSON, S.S. "British Valour"

10th April, 1959, in 24° 54'N., 35° 47'E. (Red Sea)—Kestrel ringed (N.I.O. No. E2798). 11th April in 14° 28'N., 50° 47'E. Nightjar—ringed No. 1674. Another Nightjar ringed No. 1693. Released at Aden.

ABLE SEAMAN V. G. KNELL and L.S.B.A. A. ELLIS—H.M.S. "Owen."

White Wagtail (M. alba) ringed (N.I.O. No. 1252). Some good notes from A. B. Knell while landed at Ghagha Island, Persian Gulf.

CAPTAIN A. J. F. COLQUHOUN, S.S. "Encadia"

7th May, 1959. Shortly after passing Straits of Messina 100 plus Swallows and 100 plus Red-rumped Swallows, of which large numbers came on board; all appeared exhausted. During the night and early

dawn most of them left, but several stayed and they died during the day. A small number of House and Sand Martins also present.

A Hooded Crow embarked at Bombay on 11th June, 1959, came with the ship to Aden.

CADET M. E. JONES, s.s. "Malancha" and s.s. "Mahseer"

Sends 5 separate report sheets from 10th December, 1958, to 1st April, 1959. These identifications are supported by excellent detailed remarks. Amongst birds identified were 19th December, 1958 (Mediterranean) 35°N., 17°E., Lapland Bunting (Calcarius lapponicus).

23rd February, 1959, 19°N., 86°E. (off Ganjam, Bay of Bengal) Short-toed Lark (Calandrella brachydactyla). "The two dark side patches were clearly visible at about 2 feet distance."

This was a flock of twelve birds some of which alighted on board.

8th March, 1959, 160 miles East of Aden. Blyth's Reed Warbler (Acrocephalus dumetorum). Caught on board and identified.

From 10th/11th March in the Red Sea—Hoopoe, Kestrel, Black Kite, Pied Wheatear, Swallows.

17th March (Red Sea). Red-throated Pipit (Anthus cervinus). "I was able to see clearly the rather brilliant patch of red about the throat from a few yards."

23rd March (South of Crete) Spotted Crake (Porzana porzana). "This amusing bird was held captive until weather improved."

24th March (Central Mediterranean) Lesser short-toed Lark (Calandrella rufescens). "I was able to see the small bill and delicately streaked breast. It frequently uttered the characteristic 'prrt' note."

10th May (U.K. East Coast, Cross Sands Lt. Vessel). Ashy-headed Wagtail. "Lacked any sort of eye stripe. Head grey ,darker about eye and ear coverts but not black; allowed close approach. Strong conviction as to identity as I have examined many different species of Yellow Wagtail in the hand."

(Note by Editor:—Some of Jones' remarks are included to illustrate the help that such detailed comments provide.)

CADET R. E. BERRY, s.s. "Iron Age"

10th—14th May, 1959. 55°N. 11'W. to 48°N. 41'W. U.K. to Canada (North Atlantic). Whimbrel—Photographed on board. Remained on board four days. "Every day the Whimbrel would fly away for 3 or 4 hours but always came back. During one of its flights round the ship it was trailed by a Pomarine Skua. It took no food and was becoming exhausted before it finally left us for good."

12th—16th May, 53°N. 28'W. to 47°N. 53'W. Common Snipe. "Two birds kept company with the ship. Finally on 16th May I picked up one dead on board with a broken neck."

CHIEF RADIO OFFICER F. W. GREAVES, M.V. "Derbyshire"

26th September, 1958. (Red Sea—Southern portion). Observed a steady stream of South bound migrants passing and settling on board. Among those identified this day were:—Red-backed Shrike, Yellow and Grey Wagtails, Rollers, Pratincoles, Turtle Doves, Swallows and a Kestrel.

ADDITIONAL NOTES FROM THE OCEANS

(The following additional notes have been received since Dr. W. R. P. Bourne's report—Editor.)

WHITE-WINGED BLACK TERN IN ENGLISH CHANNEL

Lieutenant A. C. Curry (H.M.S. Brinkley) sighted a White-winged Black Tern a few miles south of Beachy Head whilst at sea on 7th May, 1959. This species is only a very infrequent summer visitor to the south and east coasts of England.

PERSIAN GULF—NESTING COLONIES *(See also report from Sub-Lt. Branegan on Halul Island.)*

Mr. V. A. D. Sales has sent a detailed report which it is hoped to publish in full in a subsequent volume on the nesting colonies on Kubbar Island. Here in July, 1958, he undertook a count and estimated colonies as follows:—

Brown-winged Terns (Sterna anaetheta)—2,000 to 2,500, nests with eggs and young.

White-cheeked Terns (Sterna repressa)—1,000 to 1,300, nests with eggs and young.

Caspian Terns (Hydroprogne caspia)—300 to 350, nests with eggs but no young on this date.

A few Socotra Cormorants (Phalacrocorax nigragularis)—were seen on the island but did not appear to be breeding.

INDIAN OCEAN—"SANDY ISLAND," RODRIGUEZ *(See also report from Sub-Lt. Branegan.*

Able Seaman D. M. Neale visited this little island on 14th July, 1958, and has forwarded the following report:—

"There is a colony of 'Common Noddies' (Anous stolidus), about 250 birds, all nesting in the tree tops, the nests containing eggs and nestlings at this date. There is also a colony of about 50 breeding pairs of White Terns (Cygis alba).

I saw many single eggs perched precariously on branches quite high up, but a few were in proper nests. I also saw young birds, some just hatched, others a week or so old, and a very few ready to fly. The birds were very tame and could have been handled without trouble.

There were no other sea birds whatsoever."

(Note by Editor:—This brings to mind the eternal question, Do White Terns produce an adhesive substance to stick the egg on the branch?)

We are glad to hear that Neale, now a Leading Seaman, is in H.M.S. "Loch Lomond" and will be doing a further spell in the Persian Gulf and Arabian waters where he intends to "go on where he left off."

PHOENIX PETREL ON BOARD H.M.Y. BRITANNIA (EXTRACT FROM O.O.W. Report)

"On 6th March, 1959, in 4°N., 150°W., this bird landed on the Flag Deck with a nasty gash on the side of the head just above the eye. At first it responded to no treatment, but after a number of days living on bread soaked in salt water, raw fish from the galley and some form of green salad it began to show signs of life. The eye healed completely after 5 days but the bird showed remarkable reluctance to move about the Flag Deck despite continuous encouragement from bridge watch-keepers. A bucket of salt water was placed at its disposal for bathing but again no interest was shown at all.

On the 7th day the petrel began to move about considerably and that evening when about 1,000 miles from the Galapagos Islands it suddenly flew away very strongly."

(Note by Editor—An interesting note. Injured sea birds so seldom last long on board. We are not aware that the liking of this bird for green salad has been recorded previously! !)

SKUAS FOLLOWING SHIPS

During late April and early May, 1959, separate reports from Captain E. F. Aikman, 2nd Officer W. P. Crone, Apprentice R. E. Berry, and Mr. T. Dixon, covering the passage between U.K. and Montreal indicated unusual numbers of Pomarine Skuas along the 50th North Parellel over the mid-ocean passage.

Captain Aikman, who has kept detailed observations over this route for many years, remarks that every day parties of 3 to 5 were seen, and in most cases these followed his ship for periods up to ½-hour. In his experience this consistent ship following is quite unusual.

SOME NOTES FROM HOME

WAXWINGS

Two separate reports were received—From Norfolk in December, 1958, when C. F. Marshall saw twenty-six together on hawthorns in a hedgerow—and from Fringringhoe, near Colchester, Essex, in late January, 1959, when Chief Officer C. L. R. Turner saw at least six feeding on hawthorn and holly berries at the end of his garden.

GREAT SKUA IN PEMBROKESHIRE

On Friday, 22nd May, 1959, writes Commander H. L. Gilbert, R.N., when one mile south of Solva, near St. Davids, Pembrokeshire, my wife and I saw and positively identified a Great Skua which was perched on a telegraph pole and flew off when we were within 15 yards of the pole. Having been in North Scotland for many years we are very familiar with the "Bonxie," and also the Buzzard, but this was a Great Skua ("Bonxie") without a shadow of doubt. I understand that these birds are rarely seen in this area.

EVERY PICTURE TELLS A STORY

(Note by Editor—Late in 1958 I was fortunate in receiving two exceptionally fine photographs of a Peewit and Curlew at their nests in connection with a small exhibition. Mr. P. A. Rayfield who took the pictures told me the following history of the birds.)

"Kitty, the peewit, with her colour-ringed legs tucked beneath her in the photograph, was ringed as a chick in the crofts of Aultbea, Loch Ewe, in 1947. For seven years she returned and nested there annually, until in July of her eighth year she came to a tragic end. Grounded by a broken wing, soaked and bedraggled in pouring rain, she was found by a little Highland girl who cared for her for a week but to no avail.

The little girl, now a young woman, was the first to receive this photograph.

I believe that ours must be the only Naval Store Depot where Curlew attempt to nest annually. I say "attempt" because even here the nests have been robbed on many occasions.

On this occasion, however, the nest had a board placed close by carrying a stern warning to would-be thieves and signed by the Captain-in-Charge. Both this nest and one other were left undisturbed and the chicks were ringed." (Such is the voice of authority!—Editor.)

A PIED WAGTAIL'S TROUBLES

Lieutenant Commander T. Emanuel, R.N., writes:—

"The pied wagtail, whose nest was in a dark corner at the foot of a thick hedge in the garden, was quite used to us, and did not usually trouble to get off her nest when we looked, with a torch, to see how nesting was proceeding.

At 0740 (all times B.S.T.) on 30th June she had one nestling hatched on 28th, one hatched on 29th and two eggs.

When we looked at 2015 on 30th June an eye looked at us from the nest much as usual ; then I saw that it belonged to a snake, curled in and around the nest, and quite still. After some deliberation, since we could see very little at the time, we decided that it was a grass snake (that had lost its tail) and not an adder, so I made so bold as to nudge it gently with a stick. It moved off the nest very torpidly into the undergrowth, not surprisingly since the two young birds had disappeared. One egg was still in the nest and one lay nearby. We replaced these, and the parents now returned to the nest.

At 2145 the snake was on the nest again, and was again encouraged to leave it. The two eggs were still there, but it was so dark that we feared that the parents might not find the nest to incubate them.

At 0740 on July 1st the snake was on again but more lively. Both eggs were still there. The parents were near but I think they had abandoned the nest. There was no snake or bird on the nest at 2200, but now only one complete and one broken egg. At 0800 on 2nd the unbroken egg had been moved again and had disappeared by 1930.

We never saw the snake again.

The events seemed to prove that a grass snake will eat eggs and young birds but does so in a leisurely fashion. The wagtails reared a second brood in an inaccessible hole in a wall nearby, so my story ends with everyone happy ; wagtails, we, and presumably the snake!

MALLARD NESTS ON THE CITADEL ROOF

(Note by Editor—The Admiralty Citadel was built during the war to provide a bomb proof redoubt within which the essential operations rooms were sited. This massive flat topped windowless extension, its walls now covered with virginia creeper, forms the corner of the Admiralty on the Mall facing St. James' Park.—We are indebted to Lieutenant Commander R. D. W. Thomas-Ferrand, R.N., for the following interesting note.)

"In May, 1959, I noticed a pair of mallard courting outside my office window which opens on to the Citadel roof. Later I found the duck sitting on nine eggs under an alder bush against the upper Citadel wall. When I telephoned a Ministry of Works official he said that this happened every year, and that the duck with her brood were quite used to finding their own way down from the roof to St. James' Park. He explained that the mother dropped them down, usually in the early morning, and from the foot of the Citadel they would then proceed on foot to the park. However, I intended to save them the trouble if possible.

Early in June I noticed that the ducklings had hatched out and were enjoying the sun on the grass of the Citadel roof some distance away from their nest. When they saw me they at once returned to their nest led by their mother. At this juncture I should have caught them and taken them to the Park, but I feared the mother would desert them if I did this.

That evening when I went to see how they were faring I found them down some steps in an old air raid shelter from which they could not get out.

I cornered them and brought the ducklings up on to the grass. The next moment the whole brood rushed towards the edge of the parapet and before I could stop them followed each other straight over, falling a sheer drop of some 50 feet on to a concrete projection below, where some of them were visibly stunned by their fall. Their mother, in great distress, joined them there, and I rushed down to seek access and put them out of their predicament.

I looked out of an Admiralty window on a lower floor, and was surprised to see that the whole brood had recovered from their first fall and had promptly dropped another 70 feet down into a bicycle basement, where they were having the first swim of their lives as it was partially flooded from recent rains. Going to their rescue involved a chase right round the block, a distance of several hundred yards before I could catch up with them. None of them showed any ill effects from their two high falls.

I put the 8 ducklings in the office wastepaper basket, the mother had taken flight again, and delivered them to the keeper on the island in St. James' Park. He put them in his creche with other motherless ducklings brought in from other parts of London, and said that their mother would probably find them next day on the lake. He added that mallards nest in all sorts of unusual places in London, even sometimes in trees. The mother duck herself often leads them over parapet edges or calls to them from the grass below so that they drop down to her of their own accord. They are so soft and light that although unable to fly can withstand falls from great heights with no apparent damage beyond temporarily stunning themselves.

The keeper, whose telephone number is WHItehall 1174, has asked particularly to be informed personally of any future nests, and is very willing to catch a whole brood, including mother, directly they are hatched, and take them down to the Park."

FURTHER NOTES ON THE WANDERING ALBATROSS

In our 1958 "Sea Swallow" we published a questionnaire forwarded by Rear Admiral Sir William Jameson giving a number of points in the habits of Diomedea exulans on which further evidence was needed. Some of these points were outside the scope of observation during ocean passages, and we are indebted to Dr. R. A. Falla, Director of the Dominion Museum, Wellington, New Zealand, for a most interesting letter in which he draws conclusions resulting from several years personal observation on the New Zealand sub-antarctic islands, and from the Australian reports of the biological work on Macquarie Island. The sequence of this letter has been altered slightly so that the text conforms with the sequence of questions given in Sir William Jameson's questionnaire.

Dr. Falla writes:—

"1. It is now clear from observations at Aukland Island, Campbell Island, Antipodes and Macquarie Islands that the pattern of parental care in the wandering albatross is the same as that demonstrated by Richdale in the case of the royal albatross. The young are not abandoned by their parents, but are visited and fed at intervals until they are able to fly. We have good photographic records of the feeding of large and well-fledged chicks at Antipodes Island in November.

2. The marked birds at Campbell Island (where a few wandering albatrosses breed among the royals) and at Macquarie Island indicates that adults breed bi-annually. This is indicated already by the results of the careful ringing at Macquarie Island by the Australian parties, and was noted at Campbell Island in 1944. As Sir William suggests, this pattern would help to account for the many mature looking birds seen over the open ocean associated with the numerous younger non-breeders still under 8 years of age.

3. The predominantly dark juvenile birds appear to make a rapid and extended dispersal when they leave the nests. This is usually downwind and has a tendency to be north of the breeding islands. It is confirmed by the recovery of exhausted immature birds in New Zealand in the same month in which they must have left their nests.

5. I do not know of any conclusive evidence that wandering albatross pairs continue to associate when at sea. On the other hand there seems to be no such evidence that the wanderer is any different from the royal, on which Richdale has such conclusive results. The Australian results from Macquarie Island, when analysed, may throw some light on this matter. It may be mentioned also that in the large predominantly white race breeding in higher latitudes, females may have so little dark feathering in the crown as to be indistinguishable.

6. There seems to be enough scattered evidence for night flying to conclude that it is not uncommon if not general practice. As the birds feed mainly on squid, which is said to come to the surface a good deal at night, it would be reasonable to suppose that they do much of their feeding in darkness. I have always had the idea that birds that have developed the habit of following ships on successive days continue to do so as long as they are aware of the churned up water in the wake,

and perhaps of disabled invertebrate organisms that must strew the watery path of every passing ship. By quartering the ocean in the first hours of daylight they would be likely to pick up this disturbed water or trail of debris long before they sight the ship again and catch up later in the morning. This is somewhat speculative but accords with the observations I have been able to make.

7. I know of no explanation of the rusty pink or orange patch, nor any chemical analysis of its nature. It appears to exude from the ear orifice and stain the feathers, being presumably an excess of some secretion. It is, of course, more clearly visible on the whiter plumaged birds, but I have detected it also on the stain of the pale bases even on the brown feathers.

One final comment on the suggested terms for four plumage phases is that it is useful if we recognise that the situation is complicated by the fact that some individual birds seem destined never to become very white, even progressively. On the islands in higher latitudes on which the smaller race of wanderers breeds, a high proportion retain a mottled version of the juvenile plumage, and there is no reason to suppose that they are therefore very young birds. It is apparently still not known how long and in how many stages an extremely white bird reaches that condition. At the Aukland Islands, although the birds are comparatively small, a low percentage, say 2% reach the extreme white phase of plumage. At Macquarie Island, where the larger birds breed, the percentage of extreme white plumage is probably over 50%. . . . ."—ENDS.

Overfed Albatross

(Note by Editor—It is now well known that the large marine cuttle-fish (Amplisepia verreauvi) plays an important part in the food chain of Diomedea exulans.)

The following is an extract from the met log of M.V. Avonmoor (Captain F. Lamb).

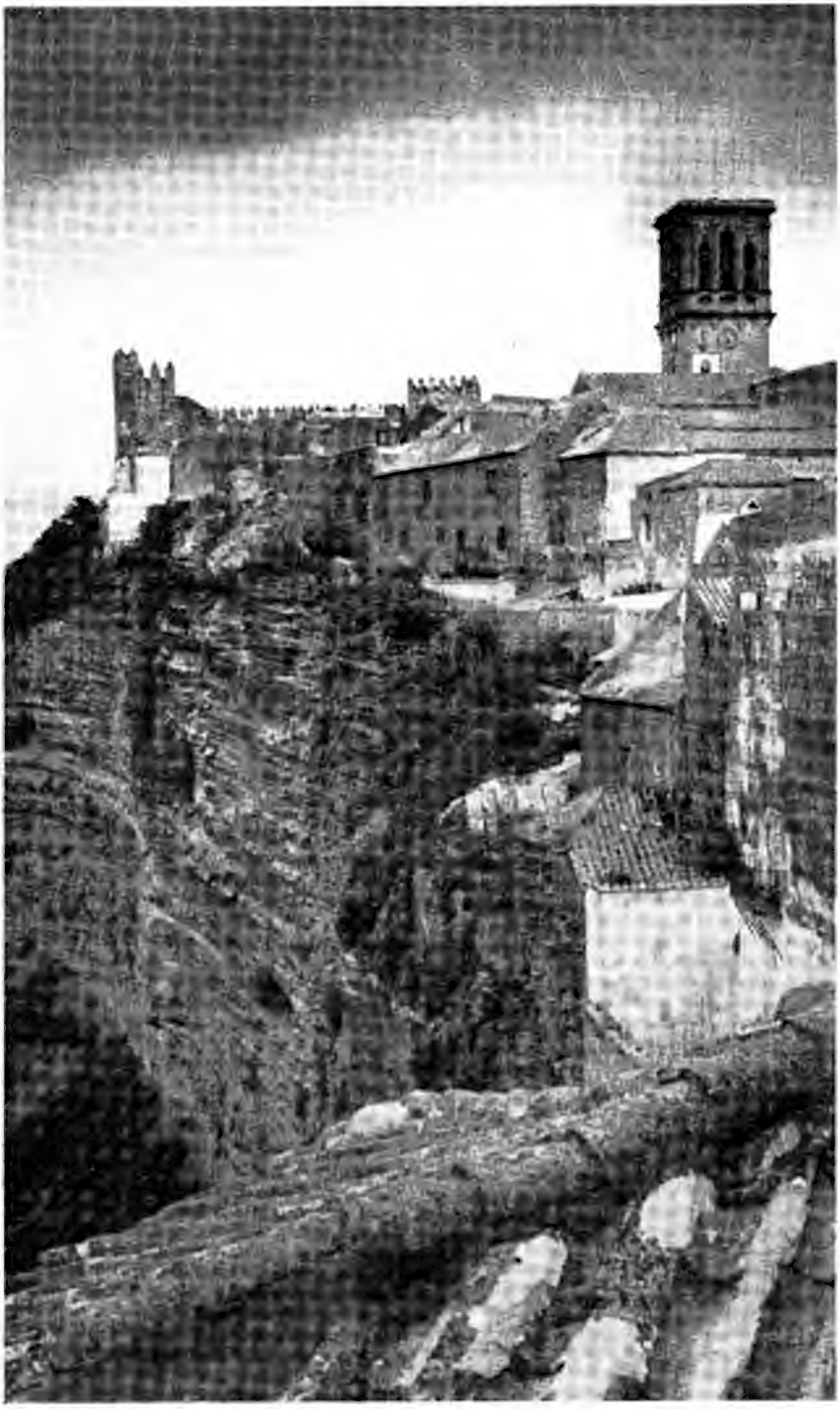
"On 3rd April, 1959, in 33° 16'S., 135°E. (passage Australia to U.K.) large numbers of Albatrosses were seen at rest on the water. One bird was seen to have a dark patch beside it resembling a dark brown dye, 3 feet by 1 foot. On the ship's approach the bird paddled away, and just before it flew it ejected a quantity of dark khaki fluid."

(Note by Editor—Doubtless the bird ejected its stomach contents before it could rise in the windless air. The dark colour may have been due to cuttle-fish "ink.")

THE NEW SOUTH WALES ALBATROSS STUDY GROUP

Large numbers of Diomedea exulans concentrate off the coast line of New South Wales during winter and early spring (May to mid November). A Study Group has been formed operating from Malabar and Bellambi which is catching and banding these birds. In 1958 a total of 58 were banded. Two forms of bands are being used. On one leg, size 14 aluminium band with words "Write—Wildlife CSIRO Canberra, Australia." On the other leg RED bands of aluminium Scotchlite will be used in future. These should be visible to observers on ships, and reflect by torchlight by night.

R.N.B.W.S. members are asked particularly to assist in identifying such marked birds, and should report full details to the Wildlife Division of the CSIRO, Canberra, Australia.



Arcos de la Frontera, showing escarpment and nesting caves of Griffon Vultures.
Photo by Pamela Harrison.

STAR-NAVIGATION OF NOCTURNAL MIGRATING BIRDS

by

DOZENT DR. E. G. FRANZ SAUER AND DR. ELEONORE M. SAUER,

Bird migration has fascinated mankind ever since ancient times. Where do these migrants go? How do they orient? The idea, that birds are guided by the sun was suggested as long as half a century ago, but it was not taken seriously until 1950 when the late *G. Kramer* (Wilhelmshaven/Germany) discovered that birds can use the sun as a compass, and that they possess an " internal clock " or time sense which allows them to take account of the sun's horizontal motion across the sky. Independently of Kramer, *G. V. T. Matthews* (Cambridge/England) also found, that birds refer to the sun for orientation, and he considered a hypothesis of complete sun-navigation. It concludes that the bird does not only use the sun for a simple azimuth orientation, but it should be able to estimate both latitude and longitude from the sun's position alone, even within a very short time at an unknown locality to which the bird has been displaced.

The sun orientation is, of course, only applicable to diurnal migration. But many species, such as the tiny warblers, travel by night, and they are long distance migrants! A European Spotted Flycatcher (Muscicapa striata), to take one example, was banded as a nestling on July 17, 1956, at Espoo, about 8 mls. westward of Helsinki. On the 19th of December in the same year, this individual was caught on the ranch Lubuku in Swaziland in South East Africa, about 7500 miles away from its birthplace. A tiny bird with a body weight of 18 to 20 grams!

It was these nocturnal migrants, the European Warblers, which claimed our special interest. What sort of system do they use to steer their course in noctural migrations nearly half-way around the globe?

Garden Warblers (Sylvia borin), Blackcaps (S. atricapilla), Whitethroats (S. communis) and Lesser Whitethroats (S. curruca) were our favoured species. In late summer and autumn, when these warblers migrate from their European breeding grounds to more southerly climates, we noticed that our caged birds flitted every night restlessly from branch to branch or fluttered without locomotion continuously on their perches. During the time of spring migration they again had the same restless nights, and these birds had been kept in isolation since their egg stage, away from the influences of the natural environment.

In autumn 1954 and spring 1955 we started at Frieburg (48°N; 7° 30'E) a systematic study of the night orientation by use of a specially designed cage. Garden Warblers and Blackcaps which showed their nightly migration restlessness were placed on a rotatable ring in a circular cage (40 inches in diameter) with a plexiglas opening at the top. The wall was impervious to light, and thus the birds could only see a part of the clear starry sky, 68° around the zenith, but nothing else of their surroundings, and the artificial horizon of the cage did not give any directional clues. And yet, having started to flutter, each of these inexperienced immatures took up its bearings like the pendulous needle of a compass, pointing mainly towards SW in autumn and towards NE in spring. Even when we tried to turn the birds away from their preferred direction, by rotating the ring, they maintained their

position in space by walking on the ring against direction of rotation. tion.

These main directions coincide with the seasonal migration directions typical of these species at that geographical area, and it was most touching that it was independent of whether or not Garden Warblers and Blackcaps had previously seen the sky either by day or by night. At their first experiment, these isolated birds were for a short time extremely excited, then they became quiet and oriented as sure as all the other birds into their autumn migration towards SW.

In autumn 1957 and spring 1958, experiments on the southern hemisphere confirmed these results. In South West Africa at Okahandja (21°59'S ; 16°56'E) and Ombu (21°26'S ; 15°20'E), Garden Warblers and Whitethroats mainly faced to S during fall, and towards N on spring migration, but again only under the clear or only to a small degree cloudy sky.

When the sky started to cloud up, the birds became more or less uncertain of their direction, and when the whole sky was completely overcast with heavy clouds the birds were disoriented and scattered iregularly around 360°. The same failure of migration orientation occurred during control experiments in different rooms under diffuse and polarized light. So it was sure that the cage itself did not present any directional clues, and that the birds got their information from the night sky.

That the warblers were visually very sensitive may be indicated by two facts: Under the thin veil of clouds, through which a man can still see the brightest stars, the birds still oriented. In some other experiments, bright shooting stars, lightning, and also moonlight overshining the look-out of the cage attracted the birds and caused aberrations of direction.

All these experiments gave important clues for a possible visual orientation system. Was a starlit sky the key stimulus for the warblers' migration orientation? To prove such a possibility, test experiments under the artificial starry sky of the *Zeiss*-planetarium (fig. 1a) in the mariners' school at Bremen (53°6'N ; 8°47'E) were performed in the spring and autumn of 1956, and again in the fall of 1958. This artificial sky has only a diameter of 20 feet ; thus the influence of parallax had to be counter balanced. And because the sky was not to revolve with the speed of the natural circulation, it had to stand during a short experiment or was re-adjusted every 15 min. again.

Control experiments under starless conditions with only the intensity of night-light diffusely illuminating the cupola showed the birds fluttering as disoriented as under a heavy cloudbank (fig. 1c). But under the artificial starry sky correctly adjusted to local conditions of time and latitude the birds chose their seasonal migratory directions, relative to the artificial planetarium directions. The first Blackcap tested in spring 1956 took its bearings towards a north-easterly direction. In autumn 1956 Garden Warblers and Blackcaps preferred SW, Lesser Whitethroats SE directions. One of the Lesser Whitethroats had been kept in total darkness during its first autumn and spring migratory periods. Now, in the third migration phase of its life it was allowed for the first time to see the starry sky, although only an artificial one. From the first experiment (fig. 1b) this isolated bird preferred a SE planetarium direction just as all the wild Lesser Whitethroats face to SE under the natural sky.

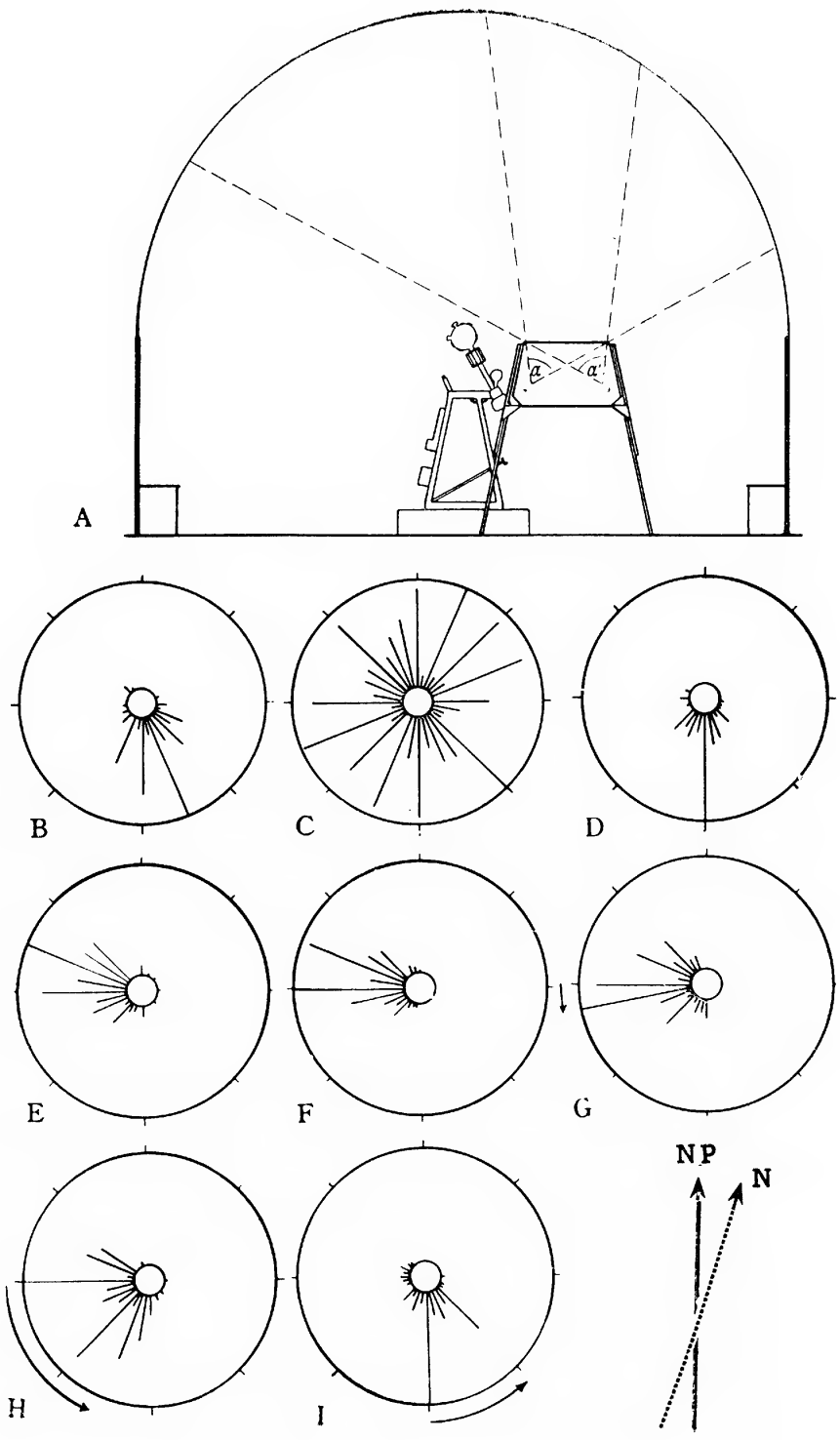

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Fig. 1. a) Cross-section of the experimental set-up in the planetarium (20 feet diameter); a — a1 angles under which the bird can see the sky. Cage drawing without the lightproof wall cover.

b—i) Some examples of experiments with a Lesser Whitethroat in the planetarium during autumn 1956. In all the experiments the cage was placed south-excentric of projector. In each flight diagram the longest radial line indicates the preferred migration direction. The lengths of all the other vectors correspond with the time in per cents of the principal flight time (= 100%) which the fluttering bird spent in these sub-directions. Np North point of planetarium; Natural north.

This same individual was examined under a planetarium sky shifted in declination (altitude) to simulate more southerly latitudes. Under declinations from 50°N to 40°N the bird headed mainly SE. Under 35°N, 25°N and 20°N it gradually shifted its bearings from SE towards S, while under 15°N and 10°N it faced due S (fig. 1d). Adjusting itself to the given latitudes, that is to the declination of the artificial starry sky the bird changed its course from SE to S and behaved precisely like all the Lesser Whitethroats on their way to their African winter quarters in the highlands of Abyssinia and in the Sudan westwards of Lake Chad. Like the inexperienced bird in the planetarium, these free birds change their bearings in the region of the Eastern Mediterranean from SE to S. We were most impressed to observe that under the southerly latitudes of 15°N and 10°N the bird was weakly motivated to fly; but when the sky was shifted to 50°N the bird's migratory urge was again very strong. So we may conclude that the azimuth and declination of the starry pattern are important for the functioning of this migratory orientation. And from the star pattern the bird does not only get the information as to which direction it must fly in, and when to change that direction, but also how far it has to fly.

The influence of false azimuth settings of the starry sky was also examined; it varied and depended on the degree of shifting. The artificial sky adjusted to a different time presents an ambiguous situation to any observer with a good clock or sense of time. At a fixed geographic position the shift may be interpreted as corresponding to time differences within the 24 hour cycle or in the year's cycle. Alternatively the difference might be interpreted as a displacement to East when the sky is shifted to a future time, or to the West when shifted to a past time. The interpretation offered by a warbler on a false azimuth setting can be determined from its resulting behaviour.

One night we placed the Lesser Whitethroat under a sky 5h 10m in advance of Local Time (this also would correspond with the constellations passed 18h 50m earlier!). What would the bird do? Would it feel that its inner clock should he shifted forward 5h 10m, that it had overslept and forgotten to start its migration earlier in the night? Then it should still go to the SE. Or would the bird feel that the season had shifted 77½ days forward, because the star pattern as presented would at that season be appropriate to the actual Local Time? The bird would then "think" that the migratory period was over and either go back to sleep or hasten to reach its winter quarters,

again by flying SE. In fact, the bird did not interpret the situation in any of these ways. It apparently felt that it had been displaced eastwards to 70°30'E (Lake Balkhash) without any alteration of its inner clock. It fluttered straight to West (fig 1e). The simple explanation of this flight is that the bird could see the expected orientation pattern about 77° too far west, or geographically spoken, the bird desired to fly back to its starting point on the same latitude. This was confirmed by another experiment in which the sky was shifted forwards 3h 26m (corresponding with 51°30'E, Caspian Sea). Again the bird faced West (fig 1f). Only with an azimuth shift as small as 1h 41m (24°45'E, Carpathia) did the bird show the first deviation from West, facing to WSW (fig. 1g). When the time difference in the following experiments was farther reduced (1h 10m ; 17°30'E, North Bosnia and 1h, 15° E, Croatia) the Lesser Whitethroat deviated over SSW and S, and it had turned back to SE as the time difference became zero (fig. 1h and i). Thereafter the bird preferred the usual SE direction of its autumn migration.. We got this expected eastward compensation under a retarded sky with other birds during the autumn migration period 1958, and reactions in further experiments under differing conditions which supported our conclusion..

These planetarium experiments demonstrate that Garden Warblers, Blackcaps and Lesser Whitethroats possess a mechanism for an outstanding nocturnal migration orientation. This enables them, together with their ability to assess time, to determine their specific migration courses from the starlit sky.

It is important to remark that these birds do not have to rely solely on the constellations. In the daytime they can guide themselves by the position of the sun, as it was shown for some of the nocturnal migrants. In cloudy nights on migration they may get some help from landmarks acting as leading lines helping them out of their orientation difficulties. But when in total darkness they are overtaken by a heavy cloudbank they begin to circle helplessly and are often drawn to lighthouses, illuminated ships or they land. Strong winds can drift the birds in the wrong direction, hundreds of miles off course. Then they have to navigate back to their route when good flight conditions return.

So navigation by the stars is the important key to the long distance orientation of these warblers on their nocturnal migration flights, most remarkable is the hereditary structure of this mechanism.

Many questions arise with these first results, and the studies are going on. Whatever the answers, we cannot help marvelling at the wondrous orientation powers of these little warblers. But they are not the only creatures possessing this gift. Other birds, fish, insects, crabs and spiders have been found by experiment to be capable of guiding themselves by the sun, calculating its relative motion of 15° within one hour.

Years come and go, and every spring and autumn countless migratory birds are wandering. It often happens that exhausted or drifted warblers suddenly occur on ships, attracted by the lights during a heavily clouded night, or off their course by strong sidewinds, and resting for a while. Later on they fly on unerringly, covering some hundreds of miles in a single starlit night, certain of their goals. In the northern hemisphere they give birth to a new generation which will grow up, without being taught, with the same instinctive capacity to follow the same migration routes of their species across continents and oceans, using their " internal clock " and the map of the stars.

A DAY'S DRIVE FROM GIBRALTAR

By Dr. Jeffery Harrison

Fabulous Andalusia! Fabulous in so many ways, not least for the ornithologist. The day I am going to describe — May 9th — took my wife and I westwards from Gibraltar almost to Cadiz, thence to Jerez and eventually to Arcos. As we left Gibraltar, one of the famous hawk migrations was taking place across the Straits and northwards over Algeciras Bay, with astonishing flocks of up to 300 Honey Buzzards streaming across from Morocco. A pair of Dartford Warblers and a Sandwich Tern were there to see us off and I wondered at the time if we should see the last of the trio discovered by Latham, the Dartford doctor, and named in honour of his home country.

The first bird in Spain was new to us—a Spotless Starling; a uniformly dark starling with purple reflections and a louder call than ours. It was the first of many. At San Roque another new species appeared in the vast shapes of twelve Griffon Vultures; a Hobby dashed across the road and a small roadside pool produced a pair of Black-winged Stilts, two drake Mallard and a White-winged Black Tern, the last a rare bird in Spain. Beyond, an Egyptian Vulture flew stlowly along the shore disturbing a flock of Yellow-legged Herring Gulls.

The country was wonderfully fertile with stretches of cornland and rich grazing marshes, colourful with herds of cattle, sheep, goats and even pigs, while the farmers were mounted on fine Arab horses or sturdy cobs. Mules and donkeys were everywhere and all looked to be excellently cared for. The roadside wires were dotted with Wood-chat shrikes and Corn Buntings; White Storks walked sedately a few yards off and some already had young peering over the rims of their nests. A pair of Purple Herons flew overhead and among the cattle not surprisingly we found the Cattle Egrets. They were a wonderful sight, each with their buff backs, crowns and plumes, orange-yellow bills and reddish legs to contrast with the rest of their snowy plumage. Let us hope that their phenomenal spread, which has now taken them across the Atlantic to America may soon bring them across the Channel to Britain.

Further on we saw three Little Egrets, equally glorious with their snow white plumes of spring. Parties of migrating Bee Eaters were on the move; one party was resting on short stubs a few inches off the ground and was spread out all over a large field. Flocks of Swallows, Swifts and House Martins were also migrating, as were four Lesser Kestrels. Montagu's Harriers sailed bouyantly beside us and a Black Kite circled lazily overhead. Crested and Short-toed Larks flew from the verges as we passed.

Nearing Cadiz we came to the great salt marshes with their settling pits and towering pyramids of salt awaiting transport. Here the Black-winged Stilts easily out-numbered all rivals for the title of commonest bird and we too were soon accepting their grotesque yet graceful legs as quite commonplace. One of the Camargue type Yellow Wagtails was feeding on the mud, a male with dark blue-black head and lores, white chin and only a trace of the white eye stripe, unlike the true Iberian Yellow Wagtail, of which there were quite a few. It was here too among a flock of Siberian Ringed Plover and Dunlin that we found the third of Dr. Latham's famous trio, a Kentish Plover. How

sad that a Man of Kent must now come all this way to see all three on the same day.

And so we came to Jerez, home of Sherry and much to our surprise without seeing a single vineyard. A Great Reed Warbler was singing his tremendous song on the outskirts and five Pratincoles looked as if they were nesting nearby. Their tern-like flight and forked tails provide a remarkable example of convergence in evolution.

The white houses, Moorish castles and churches of Arcos de la Frontera, with their White Storks' nests, stand at the top of a great red sandstone escarpment overlooking the Rio Guadalete. The cliff face was a screaming mass of Lesser Kestrels—there must have been five hundred in the air at once and many more on the ledges. Griffon Vultures were nesting in the escarpment caves, but the highlight was provided by two enormous Black Vultures, resting on nearby ledges, their collars and bare heads being dark in contrast to the Griffons. Although they were over a hundred yards above us, as they shook their feathers one could almost imagine them rattling together—each one seemed to move individually!

Prickly pears were growing in profusion at Arcos and we hoped to see a Rufous Warbler, but had to rest content with a Serin and a Red-rumped Swallow—the "red" appearing so pale as to be almost white. As we made our way back to Jerez for the night, we found a Rufous Warbler beside the road, nowhere near a prickly pear and it flashed its great tail up and down, showing off its black and white terminal bars to perfection, to complete for us a memorable day—and what made it even more remarkable was that it had poured with rain the whole time!

Male Montagu's Harrier being mobbed by Pratincoles

Sketch by Dr. J. G. Harrison, M.B.O.U.

BIRD WATCHING IN THE FIRTH OF CLYDE AND IN THE SURROUNDING HIGHLAND AREAS

By Lieutenant A. Y. NORRIS, R.N., M.B.O.U.

It is unfortunate that to many bird-watchers, the Firth of Clyde means Ailsa Craig with its Gannets and very little more. Many reference books seem to contain practically nothing on the region so that any bird-watching visitor is virtually in untapped country when he arrives in the Clyde or in the nearby Highlands on the West and North-West sides of the Firth. Furthermore, local bird-watchers are few and far between ; consequently knowledge of the Firth of Clyde in general appears to be limited and out-of-date.

A map of the Clyde will reveal the main obstacle to any form of detailed exploration. The area is a considerable one with much rugged land and very long, fjord-type, sea inlets ; communications are difficult and great distances can be covered for small displacements. The physical features often cause birds to be overlooked, although there are plenty of them. The sea and difficult terrain make habitats almost inaccessible unless considerable physical exercise is taken.

Here then is an area for which members of the Royal Naval Bird Watching Society are best equipped to explore for their means of operating offers the most efficient method of moving around the region. Thus it is that they can provide a valuable contribution to ornithology in this country.

THE AREA

In this article, the Firth of Clyde is the area, including all the islands, north of a line from Sanda Island, Kintyre, Argyllshire to Ballantrae, Ayrshire, together with Lochs Fyne, Striven, Long and Goil, and the Gareloch. Surrounding Highland areas include the Kintyre peninsula, all the land between Loch Fyne in the west, Loch Lomond and the River Clyde in the east, and the " Arrocher Alps " to the north.

HABITATS

Generally two habitats predominate ; the sea with a number of rocky islands and bounded by a desolate and often rugged coast, and the moorland and hills up to 2,000 feet. Some excellent goose and duck country occurs on Bute and in Kintyre while the only freshwater areas are the lochs of Bute, Loch Eck and Loch Lomond. Apart from the Clyde, rivers do not really exist as such, only mountain streams. Most wooded areas have been sown by the Forestry Commission and are of little interest ; natural woodlands, where they occur, are fairly extensive in places and are well worth examination. Finally there is the land above 2,000 feet ; up to 2,500 feet may be regarded as a transition bracket but above this are the high tops where snow lies for at least three months in the year and where mosses predominate—these areas are to be found in Arran and in the Arrocher mountain group.

SEA BIRDS

Perhaps the Firth does not have the vast numbers of sea birds that better known areas hold, but the variety to be seen annually more than compensates for this apparent disadvantage.

Last winter fair numbers of Razorbills, adult Gannets, Shags and Gulls were present while smaller numbers of Guillemots, Kittiwakes and Fulmars were seen, too. As the breeding season approached bringing the migratory and more oceanic birds in to swell the numbers, so the variety became remarkable. Manx Shearwaters were always present ; Terns arrived in hundreds ; Lesser Black-backed Gulls became abundant ; the two British breeding skuas were seen daily, and at the North Channel end of the Firth, Storm Petrels were occasionally encountered.

All the islands, inaccessible shores and cliffs had their breeding populations. Ailsa Craig gathered in to itself its usual 6,000 pairs of Gannets besides many Auks, mainly Razorbills and Guillemots, although a few Puffins were present. Sanda Island and Pladda received numbers of Kittiwakes and Auks. Further north Bute, Inchmarnock and the Cumbraes got Tern allocations. Along the loch sides, too, there seemed to be a good sprinkling of breeding Terns.

As the season wore on so the sea became like London in the rush hour with parent birds constantly catching and rushing food to their insatiable offspring. With the young capable of flight, there was an obvious reduction in numbers and activity, and by late September with migrants departing and passing through, with breeding birds leaving for the ocean followed some weeks later by their young, and residents assuming winter plumage, winter routine was assumed and a more ordered state existed over and on the sea.

In all this variety surprises did occur ; a most notable one was a party of eight Roseate Terns which was seen flying north through the Firth below the Cumbraes Gap in May.

WILDFOWL

A watcher visiting the Isle of Bute between October and March is assured of some spectacular "Goosing" along the west side of the island and around the lochs to the south of Rothesay. The island is rapidly becoming a wintering place for considerable numbers of Grey Lags besides gaggles of Pink Feet and a few Whitefronts of the Greenland race. The lush grass fields are bordered by plenty of good cover which enables watching to be carried out at comparatively close range. This island is also excellent for wintering surface feeders and diving ducks, saw-bills abound on the lochs and around the island.

Aros Moss in Kintyre is another grazing area for geese ; the Moss deserves a visit by any watcher whose ship is in Campeltown. The commonest goose is the Grey Lag and fairly large gaggles of the Greenland race of White-fronted Goose winter there. The southern half of Kintyre lies between two important wintering regions of the Barnacle Goose, the Solway Firth and the Western Isles ; it is not surprising therefore that these attractive birds should occur in the Peninsula. I saw small numbers fairly frequently feeding with that characteristic rapid picking motion among their much larger relations on the Moss.

The Firth of Clyde has large numbers of diving ducks as winter visitors besides a fairly small, resident Eider population. Red Breasted Mergansers can be seen everywhere while Goosanders occur regularly in the fresh water lochs. The duck enthusiast would be well advised to move up the Clyde beyond Glasgow to the flood plain above Bothwell

Bridge for here are to be seen enormous flocks of wintering ducks besides some geese and wild swans—good cover makes close observation profitable, exciting and enjoyable. This is a good Wader area, too, besides being one of Scotland's notable rare bird localities ; such birds as the Snow Goose, American Wigeon, Temmink's Stint, and Buff Breasted Sandpiper have occurred here within very recent years. In very cold weather this locality will have Smew in it.

Finally Loch Lomond will give the wildfowl specialist some enjoyment for Goosander have bred there and many Goldeneye winter around the islands.

WADERS

The Clyde does not produce the enormous numbers of Waders to be seen on the mud or sand flats elsewhere but Waders do occur everywhere and many breed in the surrounding hills. Woodcock can be found in many wooded areas ; this was particularly so on Bute.

MOUNTAINS AND HILLS

These rugged mountain and hill areas are the domain of Britain's most majestic bird, the Golden Eagle. Fortunately this fine bird is now firmly established throughout the Highlands and is to be found throughout the area covered by this article. Mr. Kenneth Richmond, a well-known authority on birds of Scotland, has said that within one hour's drive from Glasgow, the watcher is on the edge of Golden Eagle country and possibly in the heart of it. Kintyre and the rest of Argyll have a fair population, Arran has a few pairs and Dumbartonshire has at least one pair.

To find the Golden Eagle the watcher must be prepared for some long and gruelling climbing ; he will see much of the true grandeur of Scotland but will have to suffer much disappointment before his quarry is found. One cannot enter these birds' gigantic territories without having been noted by an owner which then proceeds along with its mate to make itself scarce. To find one's first Golden Eagle is a superb experience and every sighting is as exciting as the first.

I was able to watch a pair of Eagles for a few days at a time this year starting in March with the acrobatic and exciting display flight high on the mountainside. This was followed in April by the laying and incubation of two eggs in one of Scotland's highest eyries superbly situated to give a safe, sheltered, and commanding view of the glen. Finally in May and June came the hatching and rearing of the eaglets. Territories in the South West Highlands seem to be huge ; the availability of food, mainly carrion, appears to be the all important factor. Sheep farmers, shepherds, and game keepers to whom I spoke, recognised the useful scavenging habits of this mighty bird which augurs well for its continued and increased existence in this country.

Buzzards may always be seen in the glens and on the lower slopes ; at a distance it is possible to mistake Golden Eagles for Buzzards and vice versa, but as the observer gets closer and more practised, the massive head, the immense size and power of the Eagle becomes diagnostic. Three falcons may be seen in the mountains and hills. The Peregrine occurs here and there but it was usually seen around the Mull of Kintyre. The Merlin I saw on the moorland areas where numbers of Kestrel also occur.

A very beautiful yet capricious member of the raptor group which can be seen either in some of the hills in summer or, as is more likely, around the bog and marsh areas in winter, is the Hen Harrier. The powder blue/grey male with its leisurely flight on slightly bent, black-tipped wings must be one of this country's most elegant birds ; to see this bird flap nonchalantly over a skein of grazing Geese on Aros Moss one fine, frosty, January morning this year is an unforgettable memory.

For the game bird enthusiast, the Arrocher mountain group is a must, for here lives another lovely British bird, The Ptarmigan. It is probably true to say that this bird makes its home on land above the 2,500 ft- contour where snow lies for a minimum of three and a half months in the year ; Ptarmigan appear to be decreasing in numbers in the West Highlands—this is probably due to changes in climatic conditions. Three plumages each year make this alpine bird of special interest but its behaviour pattern is quite extraordinary. In bad visibility and while breeding it seems as tame as the domestic chicken, yet in excellent visibility it seems very wary. Once I found a party of four feeding less than four yards from me apparently unaware of my presence ; they only moved to let me pass and then returned after I had passed over their feeding patch. Ptarmigan watching is a mixture of hard climbing, extreme watchfulness and luck ; I averaged one successful Ptarmigan climb in four but the sight of these birds always atones for any disappointment.

Finally, two other interesting birds are the Raven which occurs in most high areas and the Ring Ousel. Little mention is made of the latter in bird reports on areas where it occurs on passage. In one glen I visited, there appeared to be at least ten pairs besides numerous unattached males. To awake on a fine morning to the sound of a chorus of these birds with an occasional Sandpiper trilling the solo part from the burn is a most beautiful experience.

WOODLANDS

The natural woodlands of the area deserve attention including the tree belts which exist around the lochs. At sea level most of the trees are deciduous but as the altitude increases conifers predominate.

One particular area in Dumbartonshire contains some Scots firs in wild and untouched country ; here lives a very sedentary population of Britain's largest game bird, the Capercaillie. It seems that the " Caper " is well established in the Central Scottish Highlands and provided that it does not do too much harm to the conifers on which it feeds, it will probably continue to extend its range.

The " Cock of the Woods " is a large and bulky bird ; the male measures three feet and weights up to ten pounds while its mate is a foot shorter and weights four to five pounds. Both sexes seem to spend much time in the trees ; it seems, too, that individuals have their own favourite trees. The searching visitor is likely to receive a considerable shock as this massive creature breaks cover and destroys the tranquility with a loud clap of its wings.

At mating time cock birds can be heard for some distance as their sonorous voices reverberate among the trees during display. By moving towards this dissonant noise, a fortunate observer will see a cock with feathers puffed out, wings drooping, head thrown back to show to full advantage the prominant black beard, and the tail splayed out in a

turkey-like fan. It is an impressive sight. Meantime, the smaller brown hen creeps about the nearby cover or sits timidly watching from a tree bordering the display ground.

The behaviour of this grouse is of considerable interest and is quite unpredictable. Sometimes it is shy and unapproachable ; other times it is aloof and ignores the closest of approaches, and sometimes it becomes most aggressive to the extent of attacking the intruder. Capercaillies may also be found in a few localities in North-East Argyllshire and in the Cowall Peninsula.

One of the most charming little birds to be seen particularly in alders near freshwater is the Siskin. Last winter while watching a party of eighteen Siskins I was fortunate to see a small party of Waxbills stripping a nearby hawthorn bush of its berries ; these Scandinavian visitors were part of the large invasion which occurred that winter.

MARSHES

There are some marshy areas in low lying ground on the fringes of this region and on one or two of the islands. Where these marshes are extensive, in Bute and near Loch Lomond I found the leks of Black Grouse ; here once more, the patient and careful observer may see the dashing courtship and jousting of the Blackcock in early spring, for this is a fascinating spectacle. The cock and his Greyhen appear to remain in the vicinity of the leks for the rest of the year.

OTHER BIRDS

Should the visitor looking for birds find himself near the Mull of Kintyre, he would be well advised to watch for Britain's rarest breeding member of the crow family, the Chough, which sometimes occurs there. With the islands of Jura and Rathlin so close an occasional bird strays across to this stark promontory. This locality has a large, resident population of Rock Doves which are of some interest because of the unusual breeding cycle of these wild and gregarious birds.

Finally the portly, little Dipper is always worth a few moments as it flits up or down streams and waterfalls, as it runs along the stony bottom of a stream, or as it just stands on a rock bobbing intermittently and watching the observer. For me, to see this bird on a fine evening is a pleasing finale to a day's birding in the Highlands.

CONCLUSION

The Clyde has much to offer the bird-watcher who must, however, be prepared for some strenuous exercise. Since local bird-watchers are scarcely met with, a set of comprehensive notes is of great value in adding to the knowledge of the region ; the authority responsible for the collection of such information is the British Trust for Ornithology. The whereabouts of eyries, nests and areas of the more unusual birds should never be divulged to anyone but the most trusted, for egg-collectors are still to be encountered.

A visitor is assured of some spectacular, absorbing and adventurous " birding " in an area blessed with superb scenic beauty to be seen both on land and from the sea.

BOOK REVIEW

"INSTRUCTIONS TO YOUNG ORNITHOLOGISTS—BIRD BIOLOGY"

by J. D. Macdonald. The Museum Press Ltd., 26 Old Brompton Road, London, S.W.7, price 12/6.

When we see the brilliant colours of the kingfisher how many pause to consider exactly what makes these colours. Perhaps we realise why a bird lays one egg at a time insteady of carrying its embryo nestlings within it to give birth like a cat having kittens. We may not have realised that the zip-fastener principle was evolved in feathers long before man "invented" it.

J. D. Macdonald invites us to take "A closer look at birds" both inside and out, their behaviour and their particular adaptations.

What I like so much about this book is the simple yet charming style in which it is written from the pen of an author with a wealth of field experience and a deep knowledge of Zoology. It is full of examples from nature and references to many birds by name.

There is no trace of the schoolroom book here though I feel that its title might give this impression. Bird watchers of all ages who are not already scientific experts should gain much enjoyment and benefit from its pages.

NEW MEMBERS 1958 - 59

Elected Hon. Member :

DR. R. A. FALLA, C.M.G. M.A., DR.SC.	Director Dominion Museum, Wellington, New Zealand.

Members :

AGNEW, J. H.	Third Officer M.N., New Zealand Shipping Coy. Ltd.
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FRIPP, T. F. S.	Second Officer M.N., Shell Tanker Co. Ltd.
JONES, M. E.	Cadet M.N., T and J. Brocklebank, Ltd.
LASKEY, J. E.	Leading Writer R.N., H.M.S. Salisbury.
MORRIS, R. O.	Lieutenant R.N., School of Military Survey.
NORRIS, A. Y.	Lieutenant R.N., H.M.S. Trenchant.
RAMSAY, J. L.	Master, M.N., P.P. Cylde Tanker Coy. Ltd.
REDDY, V. R.	Second Officer M.N., Halal Shipping Coy. Ltd.
RICHARDSON, B.	Second Mate M.N., Grand Union (Shipping) Ltd.
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TODD, R. A.	H.M. Naval Base, Freetown, Sierra Leone.
VENNING, R. H.	Master M.N., R.F.A. Olna.

ROYAL NAVAL BIRD WATCHING SOCIETY

Statement of Accounts for Year ending 30th November, 1958.

RECEIPTS				PAYMENTS			
	£	s.	d.		£	s.	d.
Balance 1st December, 1957—				Postages and Stationery	17	17	2
Cash at Bank	77	12	11	Printing—			
Subscriptions—				Sea Passage Lists	4	15	0
Annual—Current Year 68 8 0				Sea Report Sheets	7	2	6
Annual—In Advance 4 17 3				Members' Address List	5	10	0
	73	5	3	Bulletins	7	10	0
Donations	83	10	6	Sea Swallows 1957	55	4	0
Sales of Sea Swallows	12	10	0	Deed of Covenant Forms		7	6
Sales of Sea Passage Lists	3	3	9	Compliment Slips		18	6
				Information Leaflets		11	9
					81	19	3
				Expenses—Annual Meeting 1957	1	2	0
				Subscriptions—			
				British Trust for Ornithology	2	0	0
				Council for Nature	1	0	0
				Bank Charges	1	16	0
				Balance 30th November, 1958—			
				Cash at Bank	144	8	0
	£250	2	5		£250	2	5

I have examined the above account with the books and records of the Society and certify that it is correct and in accordance therewith.

19 Fenchurch Street,
London, E.C.3.

2nd December, 1958.

R. PEGLER, Chartered Accountant.
Hon. Auditor.

G. SEYMOUR TUCK,
Chairman, R.N.B.W.S., 14.12.58.

R.N.B.W.S. REFERENCE BOOK LIST
(REVISED 1958)

AREA	*TITLE*	*AUTHOR*	*PUBLISHER*
WORLD'S OCEANS	**Birds of the Ocean.* *Supplied to Ships' Reference Libraries.	W. B. Alexander.	Putnam & Co., 42 Great Russell St., London, W.C.1. Rev. edition 21/-.
NORTH ATLANTIC.	*Sea Birds*	J. Fisher. R. M. Lockley.	25/-. Collins 14 St. James Place London, S.W.1 1954.
BRITISH ISLES	1. *The Popular Handbook of British Birds.*	P. A. D. Hollom.	45/-. H. F. & G. Witherby, Ltd., 5 Warwick Court, London, W.C.1 1952
	2. *Collins Pocket Guide to British Birds.*	R. S. R. Fitter. R. A. Richardson.	21/-. Collins. 1952.
	3. *Bird Recognition. Vols.* 1, 2 (3).	J. Fisher.	Pelican Series. 1947-1951.
IRELAND	*The Birds of Ireland.*	Kennedy. Ruttledge. Scroope.	42/-. W. & G. Foyle, Ltd., 119 Charing Cross Road, London, W.C.2. 1954
BRITAIN AND ALL EUROPE	*A Field Guide to the Birds of Britain and Europe.*	R. Peterson. G. Mountfort. P. A. D. Hollom.	25/-. Collins. 1954
SOUTHERN SPAIN AND GIBRALTAR	*An introduction to the Birds of Southern Spain and Gibraltar.*	A. J. S. Tuke.	5/-. Garrison Library Printing Offices, 2 Library Gdns., Gibraltar. 1953.
PORTUGAL	*The Birds of Portugal.*	W. C. Tait.	16/6. H. F. & G. Witherby Ltd. 1924.
SOUTH AFRICA	*The Birds of South Africa.*	A. Roberts.	35/-. H. F. & G. Witherby Ltd. 1942.
	A First Guide to South African Birds.	E. L. Gill.	17/6. Maskew Miller Ltd., Capetown.
WEST AFRICA	1. *Handbook of the Birds of West Africa*	G. L. Bates.	30/-. John Bole & Sons & Daniels Ltd., London. 1930.
	2. *The Birds of West and Equatorial Africa (2 Vols.)*	D. A. Bannerman.	£6 6s. Oliver & Boyd. 1953.
CEYLON	1. *Manual of Ceylon Birds.*	W. E. Wait.	15/-.
	2. *Bird Life in Ceylon.*	Mrs. Cicely Lushington.	
INDIA	1. *Popular Handbook of Indian Birds.*	H. Whistler.	22/6. Gurney & Jackson, London. 1941.
	2. *The Book of Indian Birds.*	S. Ali.	Bombay Nat. Hist. Society. 1944.
SOUTHERN OCEANS	*The Wandering Albatross.*	William Jameson	16/-. Rupert Hart-Davis, London, 1958.

* Oceanic Birds of S. America. R. Murphy.
2 volumes American Natural History. Museum N.Y. 1936

* Out of print but 2nd hand voulmes available sometimes at two to three guineas per volume,

AREA	*TITLE*	*AUTHOR*	*PUBLISHER*
HONG KONG	*Birds of Hong Kong.*	G. A. C. Herklots.	
MALAYA, SINGAPORE, PENANG	*The Birds of the Malay Peninsula, Singapore and Hong Kong.*	A. G. Glenistor.	35/-.
PACIFIC	*Birds of the Southwest Pacific.*	Ernst Mayr.	22/6. The Macmillon Coy., New York. 1945.
JAPAN	*Handlist of Japanese Birds.*	M. Hachisuto.	5/9. Ornith. Soc., Japan, c/o Zool: Inst. Science College, Japanese University, Tokio.
AUSTRALIA	*What Bird is that?* (A guide to the Birds of Australia).	N. W. Cayley.	12/6. Angus & Robertson Ltd., Sydney. 1931.
NEW ZEALAND	1. *New Zealand Birds.*	W. R. B. Oliver.	£6. A. H. and A. W. Reed, Wellington, N.Z. 1955.
	2. *New Zealand Birds and how to identify them.*	P. Honcrieff.	Whitecombe & Toombe Ltd., Auckland, N.Z. 1928.
U.S.A.	1. *Handbook of Birds of Eastern N. America.*	F. M. Chapman.	21/-. D. Appleton & Co., New York.
	2. *A Field Guide to Western Birds.*	R. Peterson.	14/6. Houghton Mifflin & Co., Boston, U.S.A. 1939.
	3. *A Field Guide to Birds.*	R. Peterson.	
	4. *The Audubon Water Birds.*	R. H. Pough.	Doubleday, U.S.A.
CANADA	*Birds of Canada.*	P. A. Taverner.	Nat. Museum of Canada, Ottowa. 1931.
WEST INDIES	*Birds of the West Indies.*	J. Bond.	22/-. Academy of Nat. Science, Philadelphia. 1936.
MALTA	*The Birds of Malta.*	E. L. Roberts.	12/6. Progress Press Coy., Ltd. 1954.
JAMAICA	*Introduction to the Birds of Jamaica.*	Lady Taylor.	3/-. Macmillon & Co., Ltd. 1955.

ABOUT OBTAINING BOOKS ON BIRDS

The B.T.O. run a book agency for bird books. Order through the Secretary, B.T.O., 2 King Edward Street, Oxford. W. and G. Foyle Ltd., 119 Charing Cross Road, London, W.C.2 will usually obtain any book, new or secondhand. In both cases pay when you receive your order and include postage. H. K. Lewis and Co., Ltd., P.O. Box 66, 136 Gower Street, London, W.C.1, and Weldon and Wesley Ltd., Lytton Lodge, Codicote, Nr. Hitchin, Herts., are also booksellers of bird books.

All Merchant navy Seafarers may borrow books on birds from the library of the Seafarers Education Service at Mansbridge House, 207 Balham, High Road, London. S.W. 17. provided they furnish our address in U.K. and refund postage. The service will also obtain books on any subject.

ROYAL NAVAL BIRD WATCHING SOCIETY SEA REPORT SHEET (Revised 1958)

SEA BIRDS

Year..... Observer *(Capitals)*.....H.M.S./S.S. ..... Sheet No. .. ..

Serial Number	Date and Time	Ship's Position (Lat.& Long.)	Course/Speed	SEA BIRDS		Identification		Remarks
				Number	Common Name Latin Name	Positive/ Uncertain	Adult/ Immature	Details to assist identification. Unusual behaviour. Air and Sea temperatures when passing from one Ocean current to another. Sketches to support observations are always valuable.
1	2	3	4	5	6	7	8	9

Notes—1. Use separate serial number for each observation.
2. In columns 7 and 8 use first letter only, e.g., P—Positive.A—Adult.
3. Send completed sheets to :— The Editor, R.N.B.W.S., Prattenden's, Bury, Pulborough, Sussex.
4. To assist filing of records *Always Render Sea Reports in the Standard Form shown above.*